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| | |
|---|---|
| 1912 .. .. .. .. | 3248 |
| 1913 .. .. .. .. | 3177 |
| 1915 .. .. .. .. | 3506 |

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# THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—5TH YEAR. SYDNEY: SATURDAY, FEBRUARY 16, 1918. No. 7.

## A CONTRIBUTION TO THE EXPERIMENTAL PATHOLOGY OF ACUTE POLIOMYELITIS (INFANTILE PARALYSIS).

By **A. W. Campbell, M.D., Ch.M., J. Burton Cleland, M.D., Ch.M., and Burton Bradley, M.B., D.P.H.**

(From the Microbiological Laboratory, Department of Public Health, New South Wales), *Sydney.*

### Introduction.

The leading features of this communication are, first, the positive diagnosis by laboratory methods of a previously doubtful case of acute poliomyelitis (infantile paralysis); secondly, an example of the successful transmission of the human disease to a monkey by intraperitoneal injection of unfiltered spinal emulsion; thirdly, an example of a failure similarly to transmit the disease when the emulsion was filtered; fourthly, an experimental failure to transmit the disease by means of the *Stomoxys calcitrans*; and, lastly, illustrations of the histo-pathology of the human disease in an early stage and of the experimental disease as it appeared in a monkey.

It cannot be claimed that the communication brings to light any unknown facts concerning acute poliomyelitis, but we feel that its publication is justified, in the first place, because opportunities seldom arise for the pathological examination of the nervous system in acute stages of this disease, and, secondly, the experimental researches of Flexner and his collaborators at the Rockefeller Institute, of Levaditi at the Pasteur Institute, and of several others on the Continent, are so recent as to be of acute interest and so important and so technically delicate as to call for repetition by others.

### Report of a Case of Human Poliomyelitis.

On April 6, 1916, by direction of the Coroner of Sydney, Dr. A. A. Palmer conducted a post-mortem examination on a boy, R.G.R., aged six years, who had died after two days' illness with obscure symptoms. He had had a high temperature, headache and furred tongue.

The body was thin, and the teeth were irregular and notched. There was a good deal of frothy mucus in the air passages; the lungs were œdematous, and their lower lobes deeply congested. There were some yellow patches on the mitral and aortic valves. The liver was congested and firm; the spleen enlarged and firm; the right kidney was absent, and the left kidney enlarged and congested. Albumin was present in the urine. The mucous membrane of the duodenum was intensely congested, and the mesenteric glands were enlarged; the thymus also was enlarged. The brain was congested.

The fact that, at the time this examination was made, a moderately extensive epidemic of infantile paralysis was on its wane, together with the obscure symptoms of the case and the rapid death, directed special attention to the possibility of the case being one of acute poliomyelitis. The cord was consequently removed, and on naked-eye examination the unusual pink appearance strengthened suspicion.

The spinal cord and various organs were then submitted to the Microbiological Laboratory for detailed examination, with the following results:—

The heart showed patches of atheroma in the interventricular septum and in the aorta; microscopical examination of a section of the wall near the apex showed no special changes. The liver showed nothing notable macroscopically or microscopically. A portion of lung submitted was red and œdematous; nothing special was noted microscopically. The spleen was enlarged to about 8.75 cm. by 6.9 cm., was red and congested and showed marked prominence of the Malpighian bodies; no special changes were noticed microscopically. The right kidney was absent; the left was large; microscopically, the only change was congestion of the capillaries. The mesenteric glands were enlarged and firm, and showed no special microscopic changes. The thymus was about 5 cm. long by about 3 cm. broad, but showed no special microscopic changes. In the spinal cord the meninges were very pink, while the grey matter was deeply coloured and very clearly marked. Portions of the spinal cord were cut from four different levels for microscopical examination, the details of which will be given later, whilst the rest was ground up with 50 c.cm. of 1 in 3 glycerine and normal saline solution.

### Inoculation Experiments.

A large monkey, *Macacus cynomolgus* (No. 1), was inoculated intraperitoneally on May 24, 1916, with about 5 c.cm. of the above mentioned emulsion.

May 30: To this date the animal continued active and healthy and took its food well.

May 31: At 9 a.m. the monkey was noticed to be very quiet. He was undisturbed. At 11.30 a.m. he was found to be markedly paretic in both hind limbs. On moving he flopped from the one to the other side of the loins. He was able to draw himself up to the bars of the cage by the hands and legs. In the afternoon he was found lying on one side.

June 1: He was lying on his side. He could not raise himself higher than his arms; he was quite paretic in the hind limbs, but the tip of the tail occasionally moved. The rectal temperature was 37.75° C..

June 2: His condition was worse. The hind limbs were now quite paralytic. There was slight movement in the tip of the tail. The arms had become flaccid, but he was able to move them slightly and partly raise himself. He could move the head normally and yawn. The rectal temperature at 4.30 p.m. was 34° C..

June 3: Still lying down, but he could just move slightly the arms, which were now very paretic. The eyebrows and face were alert and moveable. The temperature was 35° C..

June 4: The hind limbs fell heavily when lifted. The tail showed slight movements of the tip when moved by someone, but these were apparently purposeless. He could not move the forearms himself, but when these were lifted up they did not fall so heavily as the hind limbs. Movements of the head were apparently normal, and food was eaten when placed in the mouth. He gave no indication of pain when a number of *Stomoxys cal-*

*citrans* confined in a tube were allowed to bite his side, but continued eating his food while being thus bitten. From being a monkey dangerous to handle he now gave a chuckle of pleasure when patted. He seemed to-day a trifle better. The temperature was 34.8° C..

June 5: He was much the same. The temperature was 34° C..

June 6: Perhaps a slight improvement in the forelimbs. The temperature was 34° C..

June 7: The hind limbs were completely flaccid, falling heavily on lifting. The fore limbs were paretic, but showed some tonicity when they were let go, falling less heavily than the hind limbs They also showed occasional slight movements. Movements of the face and neck were normal, and he ate well when food was placed in his mouth. When food was placed in his hand he tried to move his head towards it, but could not move the hand towards the mouth. Dr. George Rennie kindly examined him on this occasion. Knee jerks were absent but an ankle jerk was present. There was a slight periosteal reflex in the fore limbs. There was no elbow jerk. He was apparently entirely insensitive to pain (pin pricks) up to a transverse line behind the fore limbs. In front of this and in the forelimbs slight pain was evidenced by the physical expression. This evidence of pain became more definite as the head was approached. He had been passing a little blood in the urine during the last few days.

June 8: The arms could, perhaps be moved a little more freely. The temperature was 34° C.. At 3 p.m. he was killed.

*Post-mortem Examination*: The spleen, liver, heart and lungs were found normal; the kidneys were slightly congested; the salivary glands were apparently normal. There were no enlarged Peyer's patches in the intestines; the bladder was normal. The brain appeared slightly congested. There was perhaps a slight excess of clear cerebro-spinal fluid in the vertebral canal. The upper part of the spinal cord appeared normal but from the mid-dorsal area downwards seemed softer than usual. In the lumbar enlargement this softening was definite and the grey matter appeared deeply congested. Sections of the liver showed microscopically nothing special. The kidneys showed congestion of the capillaries, whilst the mesenteric glands showed the presence of some blood pigment in the walls of the medulla.

A small *Macacus* (No. 2) was inoculated at the same time as the large animal on May 24, 1916, with the same material, after it had passed through a Pasteur-Chamberland filter F. It never manifested any evidence of illness or paresis.

A monkey (No. 3) was exposed to the bites of *Stomoxys calcitrans*, which had fed on the monkey inoculated with the virus of acute poliomyelitis. The monkey used in this experiment had a "withered" left arm, which was flexed at the elbow and the wrist. He was kept in a separate room, in a quite different part of the building from the inoculated monkey.

On June 1, 1916, about 300 *Stomoxys calcitrans* caught in the neighbourhood of the Abattoirs, near Sydney, were allowed to bite the inoculated monkey. This was the day after the first development of its illness. At noon on June 2 the *Stomoxys calcitrans*, which had fed on the inoculated Monkey No. 1 on June 1, were allowed to bite the *Stomoxys* Monkey No. 3. About a dozen had died, but the rest fed freely, probably most of them biting. In the afternoon about 50 more *Stomoxys*, which had been starved for two days, were fed on Monkey No. 1, and then within 15 minutes on Monkey No. 3.

June 3.—The number of *Stomoxys*, of which 110 were counted, were fed first on Monkey No. 1 and then on Monkey No. 3. They fed freely on both.

June 4.—The *Stomoxys* still alive, about 90 in number, were fed for five minutes on Monkey No. 1, and then for 10 minutes on Monkey No. 3. The latter monkey was evidently bitten severely, as it screamed several times.

June 5.—About 70 flies were fed on each of the monkeys.

June 6.—The flies were again fed on both the monkeys.

June 7.—The flies again fed on both monkeys.

June 8.—The flies still alive, about 70 in number, were fed on both monkeys. The inoculated monkey was killed on this date.

June 9 and 10.—About 60 flies fed on the monkey.

June 12.—Fifty-six flies fed. His temperature, which, from June 5 to June 10, had been consistently 36° C., was now 37.5° C.

June 13.—Thirty-five flies fed. Temperature 38°.

June 14.—Thirty-two flies fed. Temperature 37°.

June 15.—Twenty-eight flies fed. Temperature, 38°.

June 16.—Eighteen flies fed. Temperature 38°.

June 17.—Four flies fed. Temperature just over 38°.

June 19.—Two flies fed. Temperature 37°.

June 20.—All the flies were dead.

Throughout this period and thereafter the animal showed no evidence of illness or paresis whatsoever.

The question may be raised as to whether the withered arm of this monkey might have been due to a naturally contracted attack of acute poliomyelitis. The fact, however, that the arm was rigidly flexed and not flaccid would seem to exclude this.

#### Microscopic Examination of the Human Spinal Cord.

Sections from the cervical, upper dorsal, middle dorsal, and lumbar levels respectively were examined.

The specimens were well-stained with iron-hæmatoxylin, and the various structural elements could be clearly recognized.

In all the specimens there was manifest and unequivocal evidence of those changes which characterize acute poliomyelitis (Heine-Medin disease) in an acute stage. Thus the blood vessels wherever sought were engorged; this was the case even in the white substance. Where blood vessels are normally numerous, namely, in the grey substance (both anterior and posterior cornua), along the anterior median fissure, and in the white substance, next the *processus lateralis* in the dorsal region, the vessels were not only engorged, but surrounded by a ring, often diffuse and extensive, of mono-nucleated small round cells (compound granular cells), scattered among which were epithelioid cells and red blood corpuscles. This infiltration with small round cells, or interstitial inflammation, was the dominant feature. The inflammatory foci and the resultant destruction therefrom were largest and greatest in the anterior cornua, and were best seen in a section from the cervical enlargement, where also the changes were bilateral. Bilaterality of affection applied to all the sections, but the changes were not symmetrical. Thus, in the section marked "lumbar" (really upper lumbar) one anterior horn was much more affected than the other. In this specimen it was further interesting to note a

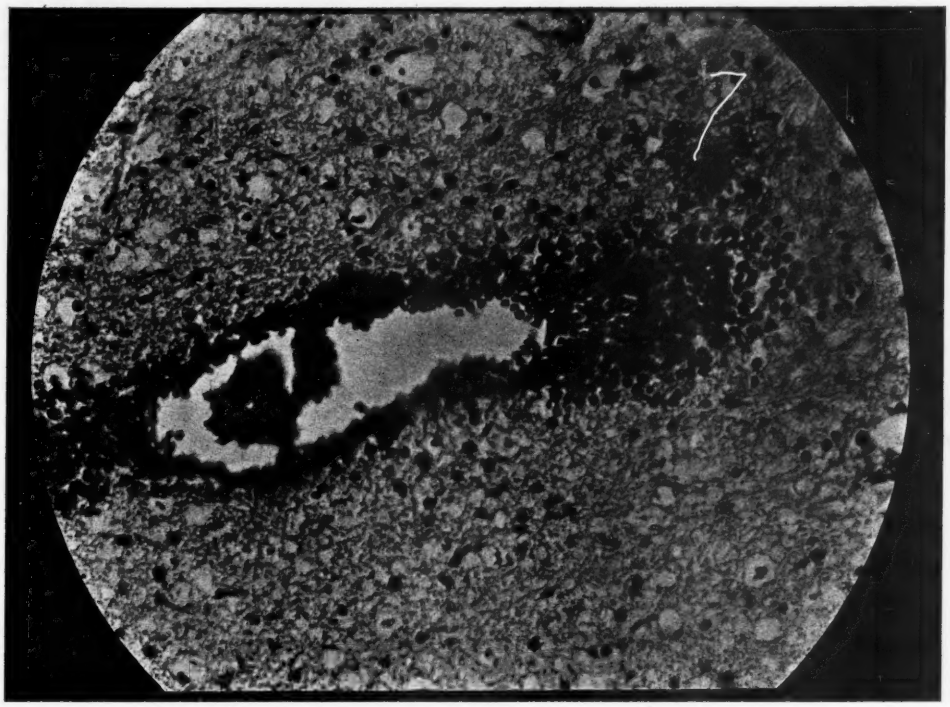

Fig. I.—Human.
A blood vessel, surrounded by small round cells and red blood corpuscles.

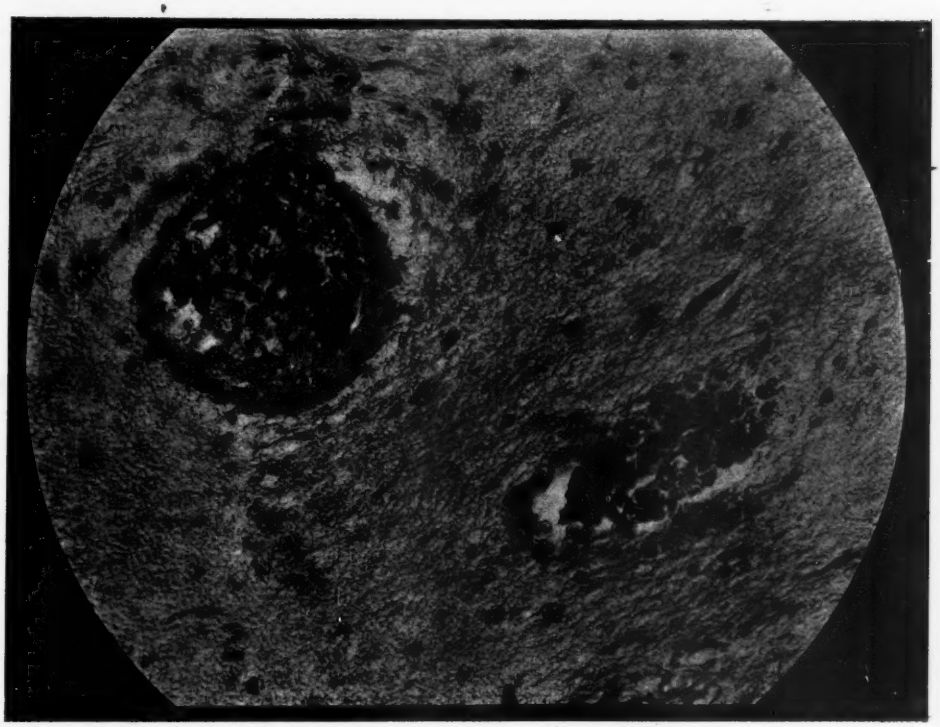

Fig. II.—Monkey. Upper Cervical.
On the left is seen the choked central canal, on the right a choked blood vessel surrounded by small round cells.

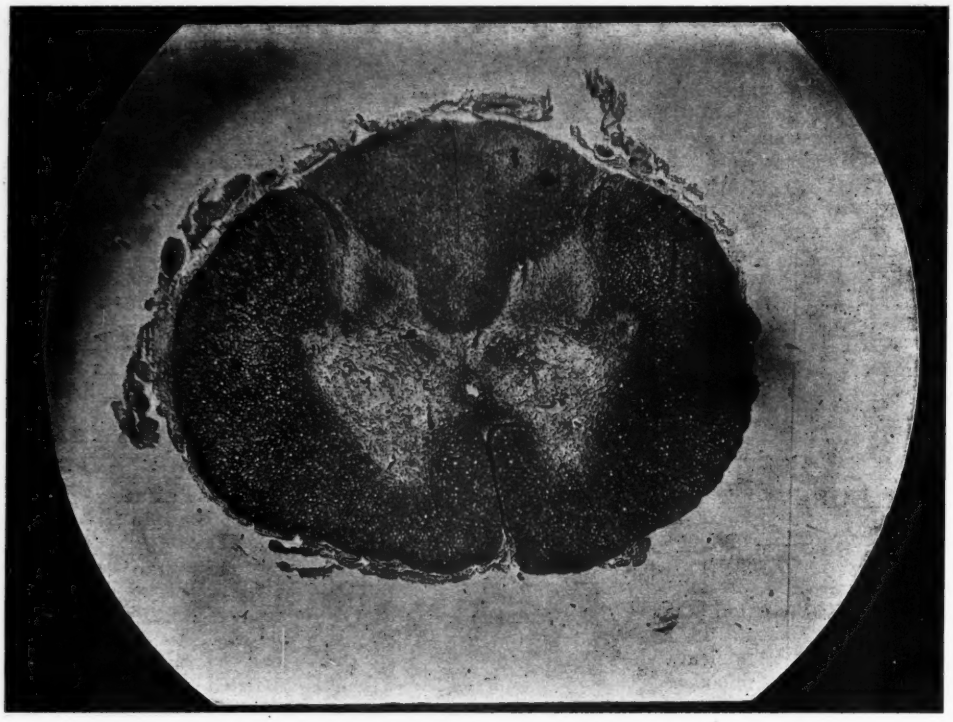

Fig. III.—Monkey. Lower Dorsal.
Note the pallor of the anterior cornua, indicating extensive necrosis.

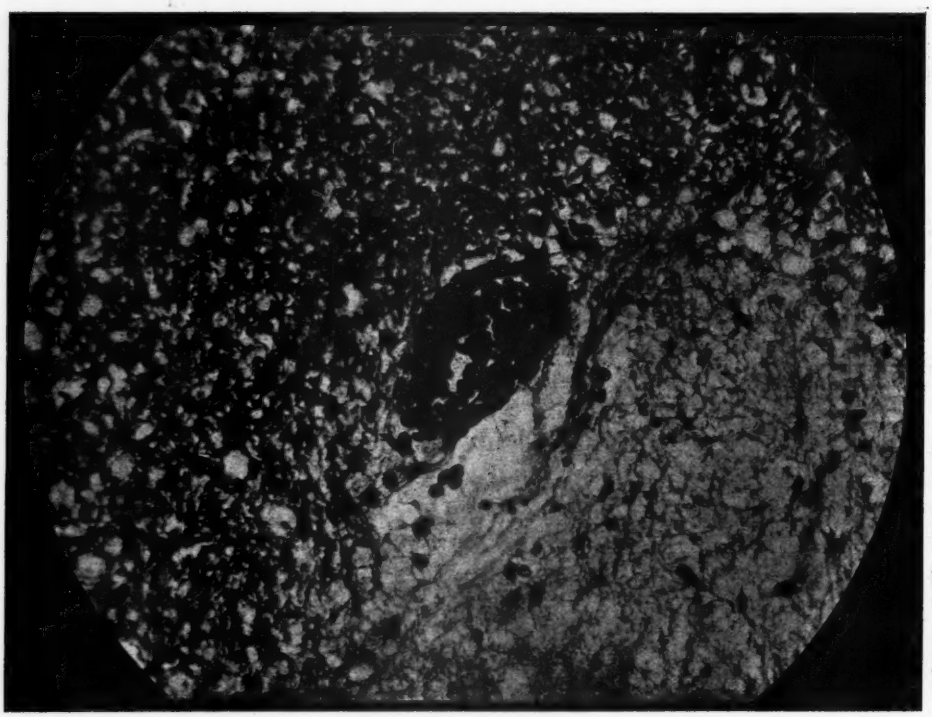

Fig. IV.—Monkey. Lower Dorsal.
A blood vessel is shown at the junction between healthy (left upper) and necrotic (right lower) tissue.

small focus of destruction (almost necrosis) in one of the columns of Clarke.

Concerning nerve cells, there was clear evidence in the section from the cervical enlargement (in the sections from other levels motor cells were not sufficiently numerous for observation) that they were affected. First, large, deeply-stained cells with Nissl bodies could be seen; these were apparently normal cells. Secondly, there were more numerous cells, which were pallid and swollen, and had excentric nuclei; these were in course of degeneration; and, thirdly, the number of cells on the whole was small, making it appear that some had already been destroyed.

The pia investing the cord did not seem to be affected, and where anterior and posterior spinal arteries appeared external to the cord they seemed to be normal. So also were portions of the spinal roots.

The central canal was normal.

#### Microscopic Examination of the Spinal Cord of the Monkey.

Sections were successfully stained with iron-hæmatoxylin.

*Upper Cervical.*—The specimen from the upper cervical region was approximately normal, but in the grey matter on one side, where the anterior and posterior cornua joined, was a collection of three or four blood vessels, much engorged, and in the neighbourhood were faintly stained mono-nuclear, small, round cells and some extravasated red blood cells. This was not a striking focus. Some vessels could be seen whose perivascular spaces were choked with small round cells (there was one near the central canal). The central canal looked dilated, and was blocked with what appeared to be a thrombus.

*Lower Cervical.*—In one anterior cornu laterally placed was a distinct area or focus of small round cells, which was certainly pathological. The central canal was normal or only distended. Neither here nor at any other level were there noteworthy changes in the investing pia-arachnoid, or extraspinal vessels or nerve roots.

*Lower Dorsal.*—Bilaterally in the anterior cornua, as represented, were what seemed to be areas of necrosis or softening. The part was pale (this could be seen with the naked eye), and structurally composed of an open network of trabeculæ, with persistent capillaries and small round cells dotted about. By this the cornua were practically converted into shells, and no nerve cells were visible. The cells surrounding the central canal were irregular, and the epithelium was gone.

*Dorsal.*—In one anterior horn, laterally situated, was a small but unmistakeable area occupied by small round cells, and near by was a congested vessel, showing perivascular exudate.

*Lumbar.*—Unfortunately, this specimen had been crushed in extraction of the cord, and though there appeared to be extensive changes in both anterior cornua, possibly they were artefacts.

Summarizing the description, we found that in every section there were changes, and these were of an interstitial, inflammatory nature. But the affection was patchy, most marked in the lower dorsal and perhaps in the lumbar region, and least marked in the cervical region.

Compared with the human specimen, the changes were not so widely distributed, they were more confined to the anterior cornua, and their destructive effects were more locally concentrated. It appeared that the changes in the monkey's cord were older and more advanced by several days than those in the human cord. But the morbid process in the two cords was essentially the same, an interstitial poliomyelitis; the irritating factor had almost certainly come along the blood vessels (it had been an intense and rapidly acting irritant, not a slow worker like the spirochaete of syphilis or the trypanosome of sleeping sickness), and the same factor might have produced the changes in the two cords.

The changes closely resembled those seen in the posterior root ganglia in herpes zoster in the acute stage.

#### Remarks.

This is a case in which the cause of death was doubtful until microscopic examination of the spinal cord and an experiment on an animal definitely proved it to be acute poliomyelitis.

Experimentally, the human disease was reproduced in a *Macaque* monkey by intraperitoneal injection of unfiltered, glycerinated spinal cord emulsion, but there was failure to transmit the disease when the emulsion was filtered and similarly used.

Concerning the successful experiment, it was but a repetition of what had been found by many others; while the failure to transmit the disease with filtered emulsion, puzzling to us at first, is now readily to be explained. We have since learned, first from the experiments of Flexner and his school, that, although infection has been produced by injection of the virus, filtered or unfiltered, into the peritoneum (also into the anterior chamber of the eye, the subcutaneous tissues, the spinal canal, veins and the sheath of nerves) the most certain method of producing infection is by injecting the virus into the brain. The reason for this is that within the nervous tissues the disease finds the most favourable conditions for operation. Secondly, although we knew from the experiments of Landsteiner and Levaditi, and others, that the virus would pass through porcelain filters and withstand glycerinization, we were not aware that, after such treatment, especially filtration, the virus lost strength, and that thereby the incubation period of the disease was prolonged, or only a mild form of the disease was produced. From the foregoing it is easy to understand our failure with the filtered emulsion.

Concerning our attempt to infect by using *Stomoxys calcitrans* (the stable fly) as a carrier, we would indicate that the experiment was cautiously conducted and thorough, inasmuch as steps to prevent contagion were taken by keeping the infected animal and the test animal widely apart in cages in different parts of the building, and by employing numerous flies and giving them abundant opportunities of feeding on both animals. The negative result is in accordance with recent experiments carried out at the Rockefeller Institute, and in accordance, moreover, with the belief that the infection in poliomyelitis is local and neural and by way of the lymphatics, not general by way of the blood stream.

On this point we may mention that experiment has shown it to be difficult to infect a monkey with the blood of a patient suffering from acute poliomyelitis, a large quantity of blood being required. How much more difficult must it be for the *Stomoxys* to carry over a sufficiency of the virus? We would subscribe therefore to the belief that epidemic poliomyelitis is not spread by means of the stable fly.

Lastly, concerning the histological findings in both this human and this experimental case, although they depart in no important respect from what has been described by others as characteristic of the disease in an acute stage, they have confirmatory value in showing that distended blood vessels, perivascular hæmorrhages and perivascular lymphocytic, infiltrative exudations are the dominant histological features, and that in the nervous system the process follows the blood vessels, and the resultant destruction of tissues is the outcome of vessel obliteration and perivascular hæmorrhage, exudation and œdema.

## Reports of Cases.

### LABOUR ATFER DECAPSULATION OF BOTH KIDNEYS.

By **J. Rosenthal, M.B., Ch.B. (Melb.),**
*Upper Hawthorn, Victoria.*

The following case is of considerable rarity and importance, since the patient had no apparent untoward symptoms during her pregnancy or labour, notwithstanding the fact that her kidneys were undoubtedly damaged.

During Dr. Kilvington's absence on holiday I saw the patient for the first time. She was then 21 years of age. There was œdema from the feet to the armpits, and the urine contained a large amount of albumin.

On his return, Dr. Kilvington performed decapsulation on each kidney, allowing an interval of three weeks to elapse between the two operations. All the symptoms disappeared, but a trace of albumin was discovered occasionally in the urine.

The patient resumed her usual mode of living, and three years or more later she married. In the course of time she became pregnant. The pregnancy was quite normal; in fact, she had far less distress than the average woman complains of.

A slight trace of albumin was frequently found in the urine, but there was no œdema.

On December 17, 1917, labour began at 4 a.m. At 9 a.m. the os had dilated to the size of a shilling. Hyoscine compound was given, and an hour later she received an injection of hyoscine (0.00015 gm.). At noon the os was fully dilated and the head was almost on the perineum. At 12.30 p.m. delivery was effected with forceps under an anæsthetic. The child cried immediately. It is strong and normal in every way. The third stage of the labour and the puerperal period passed off without any trouble. The patient got up on the twelfth day, feeling quite strong. She is able to nurse her baby.

#### Note by Basil Kilvington, M.D., Ch.B. (Melb.).

About five years ago I performed a decapsulation on both kidneys of this patient. It was one of the first cases I had done of this class. The history was of three or four months' duration. The nephritis had arisen insidiously without obvious cause. The first sign to attract attention was the general dropsy, with ascites. The urine secreted amounted to only a few ounces *per diem*. On being boiled it became solid with coagulated albumin. Some uræmic symptoms had shown themselves.

Dr. Stawell and Dr. Heller saw the patient with me, and agreed that unless some surgical intervention were undertaken, the outlook was hopeless.

The operation was really performed in three stages. Firstly, the fluid in the pleural cavities was aspirated, as it was unsafe to give an anæsthetic until this had been done. The renal decapsulation was performed first on one kidney, and after an interval of three weeks on the other. The kidneys were of the large, pale variety, with some congestion. The capsules were quite loose from the cortex. The first thing noticed was that, after about two weeks, the amount of urine increased considerably. On some days as much as three litres were passed. The quantity varied greatly from day to day. The anasarca gradually disappeared.

Finally she became almost normal, though the urine was usually of a somewhat low specific gravity and at times contained a trace of albumin. The blood pressure varied from 140 mm. to 160 mm. of mercury. These signs made me suspect that a certain amount of fibrosis was present in the kidneys.

The case is certainly one of the most dramatic recoveries I have seen, and the decapsulation was technically quite easy. The first pregnancy naturally gave rise to considerable anxiety, but under Dr. Rosenthal's skilful management has terminated without a hitch. I am not aware of any case having been reported of a patient who, having previously had double decapsulation performed, has borne a healthy child.

## Reviews.

### THE HYGIENIC RELATIONS OF MILK.

The Medical Research Committee, who are charged with the administration of the Research Fund which has become available under the provisions of the *National Insurance Act*, invited Dr. Janet Lane-Claypon to assist them in collecting the available scientific evidence upon the hygienic relations of milk from all the best sources of information, however widely scattered. Dr. Lane-Claypon had already made valuable reports upon certain aspects of the subject to the Local Government Board, who kindly placed her services at the disposal of the Committee. The Committee found this collection and critical summary of the published work upon this subject so likely to be valuable to many of those engaged in research work or concerned with the administrative questions which centre round the problems of milk and its proper use as a food, that they arranged for its publication at the lowest price compatible with efficiency of production. The primary aim of this book[1] is to present a survey of the existing knowledge upon certain aspects of the milk question. It is recognized that, if all the material which might properly be included under the title of the book were brought into one volume, the treatise would be too unwieldly for general use. Attention has therefore been concentrated upon those branches of the subject which have less consideration from other authors.

The subject matter is dealt with in 20 chapters, each of which is preceded by a detailed summary of its contents, occupying several pages. The first three chapters deal with the composition of milk. The authoress remarks that this is such a well-worn subject that it would not be unreasonable to believe that complete information is obtainable on the composition of the milk of the more common species of animals. Recent investigations, however, show that there is no precise composition which can be assigned to the milk of any species. Figures can be obtained which represent the average composition of a considerable number of samples of milk. The separate samples show, moreover, wide variations in the amounts of their constituents. Variations also occur in several of the constituents of milk, from such causes as the period of lactation and the fullness of the gland at the time of milking. It has long been known that the amount of fat increases in each successive portion of milk leaving the mammary gland. This fact shows the futility of estimating the composition of samples of human milk, unless a mixed sample of all the milk secreted at one time is obtained and the importance of feeding an infant with the end milk obtained from the gland. Unless this be done, the infant loses much of the fat. In regard to the biological

[1] Milk and its Hygienic Relations, by Janet E. Lane-Claypon, M.D., D.Sc. (Lond.); 1916. London: Longmans, Green & Co. Demy, 8vo., pp. 348, with 8 plates. Price, 7s. 6d.

relationship of the proteins of milk, it appears from studies by the precipitin method, the method of complement deviation and anaphylactic studies that the proteins of human and cow's milk are dissimilar, so that the milk proteins must be regarded as "foreign" for the human infant; that in both cow's milk and human milk the caseinogen and the lactalbumin are separate bodies; and that the albumin of milk and the albumin of the blood are biologically identical in both cows and women. Although the quantities of the inorganic salts which are present in cow's milk are generally two or three times greater than the amounts of the corresponding substances in human milk, the content of iron in human milk is two or three times as great as in cow's milk.

Two chapters are devoted to the so-called "biological properties" of milk, one chapter dealing with the ferments or enzymes, and the other with the substances concerned in the production of immunity. Since the year 1900, when Escherich of Vienna sought to account for the slow progress made by infants fed on boiled cow's milk, as compared with breast-fed babies, by suggesting that the ferments were destroyed by the heat, many investigations have been carried out, chiefly on the continent of Europe, where boiled milk is almost universally used for hand-feeding of infants. The presence of these ferments in milk has led many credulous persons to describe milk as a living substance, and to endow it with vital powers which later investigation has not substantiated. There are two possible ways in which the ferments of milk might be useful to the infant. They might assist in the digestion of the food material contained in the milk after it has been swallowed by the infant or they might conceivably act in connexion with the oxydizing and reducing processes occurring in animal cells. Proteolytic ferments have been described in milk, but it appears probable that these ferments are derived from introduced bacteria. It appears fairly certain that human milk contains a ferment capable of splitting fats, although such ferments have not been obtained in cow's milk. Oxydizing ferments are undoubtedly present in samples of milk, and these ferments have been studied with great care, in the hope that they might serve as a basis for practical tests for distinguishing between pasteurized and raw milk. Reductase and catalase are found in all samples of milk. Human milk appears to contain a salolase which converts salol into carbolic and salicylic acids. This ferment appears to be invariably present in all samples of human milk, and does not appear to be readily destroyed by heat. In regard to the substances concerned in the production of immunity, it seems that whatever protective substances may be present in the blood of the mother will pass into the milk. During the colostral period these bodies reach a greater concentration than in later milk. Although many investigations have been completed upon the power of milk to destroy bacteria, it would appear doubtful whether milk possesses any useful bactericidal powers. A decrease in the number of colonies observed on plating out milk is noticed when milk stands for a few hours after milking. On the other hand, the infection of fresh milk with even a small number of pathogenic organisms leads to the occurrence of epidemics consequent upon the multiplication of the microbes in the milk.

Five chapters deal with the use of milk as a food for infants. In dealing with breast feeding, the author shows that the evidence brought forward gives no support to the statements that have been made to the effect that the capacity for lactation is decreasing among women. Experience also shows the advantage of allowing a sufficient interval to elapse between the times of feeding. The activity of the mammary gland depends greatly on the stimulus which it receives. Where a considerable demand is made upon it, a greater amount of milk is excreted. Conclusive evidence has been obtained to show that the output of milk is diminished when the food supply of the mother falls below the physiological limits, as measured by the number of calories per kilogram of body weight. A chapter is devoted to the nutritive value of boiled milk of the same species. In this country it is not the custom to boil human milk, but in other countries where wet nurses are frequently employed, this practice is freely followed. In this way any danger of infecting a healthy infant with syphilis is avoided. No precise data are available to prove that this boiled milk is of the same nutritive value as raw milk. In regard to cows, it would appear that the use of boiled cow's milk as a food for calves is employed as a safeguard against tuberculosis. Evidence is available that such boiled milk is as suitable as raw milk for the growing calf. If small amounts of salt are added to the boiled milk, the growth of calves in the early weeks of life is more rapid than when the calves are fed upon raw cow's milk. A study of the clinical data on the nutritive of raw and boiled cow's milk as a food for infants shows that no reliable information is as yet available. Most of the observations made in hospitals have been confined to pathological cases, and have extended over too short periods. Again, different physicians tend to use one form of feeding for the majority of their patients, so that comparative observations in regard to different methods of feeding are usually absent from the records of investigations. At the present time there is no really reliable information as to the average rate of growth of the human infant. It appears that many children show an improved rate of growth when placed upon raw cow's milk, while an equal number grow just as rapidily upon boiled milk. The authoress concludes that no form of artificial feeding will produce results of as favourable a nature as are obtained by natural methods of feeding. Where artificial feeding must be employed there is no evidence that milk loses any of its nutritive value by boiling. Rather more satisfactory progress is made with boiled than with raw milk. These conclusions apply to the general infant population, and not to special infants suffering from pathological conditions. A chapter deals with dried milk. The use of these foods is a development of the last few years, and it seems likely to the authoress that this development will continue. Many dried milks are of similar composition, containing 25% of fat, 25% of protein, 37% of lactose, and 6% of ash. Roughly speaking, the solids are present in eight times the strength of the original milk. In addition to these dried milks, which are obtained from milks rich in fats, manufacturers produce dried "half cream" milk, in which the fat is present in about half the usual amount. Other varieties of dried milk contain even less fat.

In a special chapter the authoress discusses the alleged production of Barlow's disease and rickets by the use of heated milk for infants. It has been stated that the use of heated milk accounts for both of these diseases, but the degree of heat and method of heating required are not stated. As far as is known, the vitamines which are present in milk remain uninjured, even after boiling. A chapter deals with the changes which occur in milk as the result of the application of heat. A certain proportion of the calcium is precipitated. Accompanying this precipitation are alterations in the acidity and the coagulability with rennet. Changes occur in the proteins, but these appear to be confined to the albumin fraction, unless the temperature is allowed to pass considerably over 100° C. If, however, milk is heated above 100° C., for example, exposed on rollers, appreciable changes occur in the protein during desiccation. No change occurs in the lactose unless the temperature is raised above 100° C., when a brown colour developes, indicating the formation of caramel.

Two chapters deal with the micro-organisms present in milk and liable to cause disease. Some account is given of certain epidemics in which the infection was borne by milk. The sources of contamination of milk are considered as being derived from the cow itself, either from the udder or some other part of the animal, from the milker, from the cow-shed, either from the air, the walls, the bedding or the food, from the milk-pails, from the process of filtering and cooling, from churns or bottles, in the process of transit from the farm to the dairy and from the dairy to the customer, in the course of manipulation at the dairy and in the home of the customer. Another chapter is devoted to the methods of producing milk as far as possible free from bacterial contamination. Descriptions are given of milking machines, protected pails, and suitable coolers employed in obtaining "certified milk." A chapter deals with the thermal death points of the various micro-organisms which are present in milk. Another chapter is devoted to the means commonly used in heating milk. Attention is paid not only to pasteurization in the home, but also to commercial pasteurization by the "Holder process" and by the "flash process." The final chapter deals with the presence of pathogenic organisms in butter and cheese.

This work bears many signs of careful and painstaking preparation. A very complete bibliography bears testimony to the thorough manner in which the authoress has exam-

ined the literature. No student of the problems connected with milk can neglect the perusal of this book. The general practitioner will find much useful information in the chapters devoted to the feeding of infants.

## University Intelligence.

### THE UNIVERSITY OF SYDNEY.

A monthly meeting of the Senate of the University of Sydney was held on February 4, 1918, at University Chambers, Phillip Street, Sydney.

The following degrees were conferred *in absentia*: Master of Surgery, E. S. Holloway, M.B., L. J. J. Nye, M.B., and E. E. Pittman, M.B.; Bachelor of Dental Surgery, R. Bardsley and L. C. Firth; and Master of Engineering, R. A. Hawken.

A letter was received from Mr. Meredith Atkinson, resigning as Director of Tutorial Classes and Lecturer in Economic History. The resignation was accepted, and it was resolved that a letter be forwarded to Mr. Atkinson, expressing appreciation of the Senate for his services in the organisation and administration of the Tutorial Classes. On the recommendation of the Chairman of the Committee for the supervision of Tutorial Classes, Mr. G. V. Portus, M.A., was appointed Acting Director of Tutorial Classes for a period of twelve months.

A letter was received from the Public Service Board, urging the immediate establishment of a full course in Public Administration. It was resolved that the Board be informed that immediate arrangements for the full course will be made.

A letter was received from Miss E. R. Caird, of Melbourne, offering one thousand pounds for the foundation of a scholarship in the Faculty of Medicine in memory of her late father, Mr. G. S. Caird. It was resolved that the gift be acknowledged with thanks; and that the question of arrangement for giving effect to the gift be referred to the Faculty of Medicine for report.

A letter was received from Mr. Hugh Dixson, offering to present thirty milligrams of radium for experimental purposes under certain conditions. It was resolved that the gift be accepted with thanks.

The Chair of Zoology became vacant at the end of last year through the retirement of Professor Hazwell, who occupied it for a period of 27 years. Applications were invited in Australia and in the United Kingdom, and the testimonials were considered by a committee in London, which reported upon them to the Senate. The choice of the Senate fell upon Dr. S. J. Johnston, B.A., D.Sc., Sydney. Dr. Johnston had a distinguished career in his own University, and after holding certain teaching appointments outside succeeded Dr. J. P. Hill as principal assistant to the Professor of Zoology in the University, and during the past year has been in full charge of the department of zoology in the absence of Professor Haswell.

To the newly-established Chair of Architecture the Senate has appointed Mr. Leslie Wilkinson, A.R.I.B.A., assistant professor of architecture in the University of London School of Architecture at University College. The mode of precedence was similar to that adopted for the Chair of Zoology, the applications being submitted to a committee of distinguished architects in England.

A letter was received from the Civic Art Association, London, suggesting the establishment of the study of Civic Art.

On the recommendation of the Dean of the Faculty of Medicine, the following appointments were made: (1) Dr. M. C. Lidwill, Tutor in Anæsthetics for one year; (2) Dr. H. R. G. Poate, Lecturer on Special Military Surgery; and (3) Dr. H. S. Stacy, Lecturer in Special Military Administration.

Amended by-laws for the matriculation examination in accordance with the resolutions adopted by the Professorial Board were adopted. These read as follows:—

Add to by-law 3, calendar page No. 33, the following new paragraph:—

> Where an undergraduate of any other Australasian University desires to transfer to this University he may, at the discretion of the Professorial Board, be granted all the privileges as to matriculation and admission to courses for degrees to which he is entitled in his own University. If he desires to enter on a course in this University which is not provided in his own University, he may be so admitted provided that he has matriculated and passes at either University in the subjects prescribed for entrance to the faculty or department concerned. In every case the applicant shall give sufficient evidence of his alleged status and of good conduct.

New by-law to stand in lieu of present by-law 5, calendar p. 33.

All candidates for matriculation shall be required to pass an examination in accordance with the following general requirements:—

(1) English.
(2) Mathematics.
(3) Latin, Greek, French or German.
(4) One or more of the following:
  (*a*) One or more of the foregoing not already taken.
  (*b*) Mechanics.
  (*c*) Either (*i.*) English History. or (*ii.*) Modern History.
  (*d*) One of the following science subjects—(*i.*) Botany, (*ii.*) Chemistry, Inorganic, (*iii.*) Geology, (*iv.*) Physics, (*v.*) Physiology, and (*vi.*) Zoology.

In all subjects except Mechanics there shall be a Higher and a Lower standard, the examination in Mechanics is at the Higher standard only.

A pass at the Lower standard shall be deemed sufficient except where the Higher standard is specified.

Candidates must pass at the Higher standard in three subjects, one of which must be English, Latin, Greek, French or German. The whole examination must be passed at one sitting.

The pass, in accordance with the general requirements, will admit to matriculation in any faculty or department for which no special requirements are prescribed.

If the pass also complies with the special requirements prescribed for any faculty or department, the candidate will be entitled to admission to that faculty or department.

If the pass does not comply with the special requirements for any faculty or department, the candidate may complete his qualification for entrance to that faculty or department by passing in the additional subject or subjects at one additional examination in accordance with the special requirements therefor.

New by-law to stand in lieu of the present by-law 6, Calendar page 34:—

> Unless the candidate has complied in the general examination described in the previous section, with the special requirements for any faculty or department, he shall, in addition to the general requirements for matriculation be required to pass an examination in accordance with the special requirements for the faculty or department concerned, that is to say—
>
> (*a*) Faculty of Arts: Latin or Greek at the Higher standard.
> (*b*) Faculty of Law: Latin at the Higher standard.
> (*c*) Faculty of Medicine and Department of Dentistry: Latin and another language other than English, one at the Higher standard.
> (*d*) Faculty of Science: Latin, Greek, French or German at the Higher standard.
> (*e*) Department of Engineering: Mathematics at the Higher standard, Mechanics, General Paper in English and Geography.

**Note.**—Engineering students who desire to offer themselves later for associate membership of the Institute of Civil Engineers are requested to note that they should select French or German under the general requirements for matriculation.

Our attention has been drawn to a mistake in the date of the reference quoted in the article on the "Voluntary Rationing of Children" in *The Medical Journal of Australia* of February 9, 1918. The reference should read: *The British Medical Journal* of December 8, 1917.

The Medical Journal of Australia.

SATURDAY, FEBRUARY 16, 1918.

## Physical Training of Children.

For centuries steps have been taken to promote the intellectual evolution of children. The establishment of colleges and schools bears witness to the desire to foster mental development. The ancient endowment of prizes, exhibitions and scholarships is a testimony of the intention of public-spirited men and women to stimulate the education of the mind and to provide means for those who cannot pay for this tuition. The Churches have enforced on those professing their tenets the duty of teaching the young. Treatises, manuals and pamphlets discuss every aspect of the problem. For many years the compulsory education of the minds of children has been required by the Governments of civilized countries. The body, however, stands in need of training in the same way as the mind. It is probably as important for the well-being of a nation that its citizens should be strong physically as that they should have received mental instruction. During childhood the bones and muscles are in a plastic state and can be moulded to a surprising extent by suitable training. It is in childhood that the future citizens can be fitted for their work in life.

The spontaneous movements and the exertion during play are undoubtedly of inestimable value, but properly directed and co-ordinated exercises give better results as regards physical training. Morphologists have recognized for some years that the shape of the bones and the contour of the muscles are, in part, determined by the functioning of these structures during growth. Much careful work has been done to ascertain how particular movements influence the form of the skeleton and the size of muscles. Physiologists have observed how gymnastics, calisthenics and physical exercises produce the qualities of alertness, decision, concentration and perfect control of motion, in addition to maintaining and improving the nutrition of the body. Exercises can be arranged not only to direct the growth of the limbs and trunk, but to influence the respiration and circulation. Defects due to imperfections in skeletal construction and muscular architecture, too often lead to deformity, when their correction is left to nature. A well-informed instructor of physical training can usually devise a movement which will correct any structural imperfection, if the exercise be regularly and conscientiously performed.

The school teacher should be responsible for the physical training of the child as well as for its mental tuition. The teacher should take as much pride in the physique of the pupils as in their acquaintance with knowledge. The school inspector should be as alert in respect to the appearance of the scholars, sitting, standing, walking and running, as he is in regard to their answers to his questions. The teacher will, no doubt, remember that physical training occupies not only the few minutes specially set apart for carrying out certain defined movements, but is also continued during the hours of other lessons, when habitually correct positions of the body remedy any tendency to spinal curvature or to other deformity. Just as the curriculum of mental instruction is no longer left entirely to the whims and fancies of the individual teacher, so the course of physical training should be laid down in its essential features. The teacher should receive as careful a training for this part of the school work as for the more usual duties.

The members of the medical profession have many opportunities of assisting in the formation of a good physique in children. Few children escape the more or less frequent ministrations of the medical practitioner, who may seize the occasion to instruct parents on the importance, nay the necessity, of giving special heed to the bodily development of their offspring. If the advice offered take the form of specific directions of what should be done, few parents will neglect to carry out the instructions.

### VITAMINES IN BACTERIA.

The cultivation of bacteria upon artificial media has been practiced for many years, but little knowledge has been obtained of the principles underlying

the nutrition of these micro-organisms. Botanists have ascertained that solutions of inorganic salts in water are well suited for the growth of plants from seeds. They have been of opinion that these liquids contain all that is needed for the nutrition of vegetable forms of life. It may be, however, recalled to mind that most of the seeds employed by botanists in these metabolic experiments, are of large size and may contain appreciable weights of materials which are necessary for growth and which are not present in the culture fluid. Bacteria are usually regarded as lowly plants, but bacteriologists observe that most microbes do not multiply freely in the inorganic culture media used by botanists. On the assumption that the parasitic existence of pathogenic germs has modified the processes by which food is ingested, proteins and other organic substances have been introduced by bacteriologists into their culture fluids. Recent investigations have suggested that the presence of vitamines or food hormones are as necessary for the nutrition of certain species of bacteria as they are for the metabolism of more differentiated animal and vegetable organisms. These substances are contained in the bodies of certain bacteria and are introduced into the culture media in the inoculations. On this account massive sowings of some microbes yield growths when small inoculations of the same material fail to produce colonies. Research is required to discover other sources of the vitamines besides the micro-organisms.

## THE DETECTION OF ANTERIOR POLIOMYELITIS.

We publish in this issue of *The Medical Journal of Australia* an account of certain experiments conducted by Drs. A. W. Campbell, J. B. Cleland and C. Burton Bradley in connexion with the diagnosis of anterior poliomyelitis. It is known, as a result of the inquiries of Simon Flexner, Levaditi and others, that infantile paralysis is not the only manifestation of disease resulting from infection with the virus of epidemic anterior poliomyelitis. Cases are noticed in which a fatal conclusion is rapidly reached. The symptoms are frequently so vague that there is no certainty as to the nature of the pathological processes occasioning death. Dr. A. A. Palmer conducted an autopsy on a boy, aged six years, who died after two days' illness characterized by high fever, headache and a furred tongue. From the spinal cord an emulsion was made in glycerine and water. This emulsion was introduced into the peritoneal cavity of a monkey. Seven days after inoculation the monkey exhibited signs of paralysis in both hind limbs. The paralysis extended to the arms in 24 hours, by which time the hind limbs were quite flaccid. The monkey was killed on the fifteenth day after inoculation.

A portion of the same emulsion was filtered through a porcelain filter and injected into the peritoneal cavity of a second monkey. This monkey manifested no signs of illness. The virus of anterior poliomyelitis has been observed by Flexner and others to pass through a porcelain filter, but infection by no means invariably follows intra-peritoneal inoculation.

The spinal cords of the boy and of the infected monkey have been examined microscopically and identical changes have been noticed in both cords. It has been therefore established that the boy died from acute anterior poliomyelitis.

Advantage has been taken of the possession of an infected monkey to test the possibility of a stable fly, *Stomoxys calcitrans*, transmitting the virus from monkey to monkey. Several hundreds of these flies have been fed on the blood of the infected monkey and allowed to bite another monkey over a period of several weeks. The monkey has not contracted the disease.

## PSEUDO-APPENDICITIS ZOOPARASITICA.

The presence of various worms in the appendix has led clinicians and pathologists to examine the relationship between these parasites and inflammation of the vermiform appendix. Nearly twenty years have passed since Elias Metchnikoff reported the histories of three patients who experienced attacks of appendicitis. Worms belonging to the species, *Ascaris lumbricoides*, were found in each appendix. Metchnikoff expressed the opinion that the attacks of appendicitis were due to the worms preparing the way for bacteria causing inflammation of the mucous membrane of the organ. Occasional papers appeared during the next ten years in medical literature recording cases of appendicitis in which *Oxyuris vermicularis* found in the inflamed organ, was considered to have excited the attacks. Raillet noted that worms of the genus, *Oxyuris*, were observed in 58 out of 119 appendices removed by surgeons. Cecil and Bulkley demonstrated

worms in 15% of inflamed appendices and believed that worms alone could cause appendicitis. On the other hand, Aschoff found worms in only 1% of his cases of appendicitis and disbelieved the theory of the parasitic ætiology of appendicitis. Rheindorf published results to prove that worms were found in 50% of appendices removed at operation. As worms are found much less frequently in healthy appendices examined at autopsies, Rheindorf regarded them as the primary factor in appendicitis. Rheindorf called attention to certain holes and clefts in the mucous membrane of the appendix and was of opinion that these were worm-canals.

Recently Yeisaku Matsuoka has published the results[1] of an extended investigation upon 103 appendices removed in surgical practice and 23 appendices obtained in the post-mortem room. The appendices obtained at operations were placed immediately in strong formalin solution without being opened. When fixed, they were subjected to a minute examination. Three pieces taken from the proximal, median and distal portions, were cut into serial sections. The remainder of the appendix was opened and the contents mixed with glycerine-gelatine or Farrant's solution with or without preliminary treatment with antiformin. The material was observed carefully with the microscope. The detection of the ova of worms was not easy and the eggs were readily missed unless extreme care was taken. The whole of the appendix was cut up and thoroughly observed, since worms were often embedded in the mucous membrane. Fifty-eight out of the 103 appendices removed at operation, were found inflamed. Twenty-eight were obtained at immediate operations for appendicitis and the remainder were taken at operations performed when the acute symptoms had subsided. Forty-five appendices appeared quite normal. Of the 103 patients yielding the specimens, 23 were male and 78 female. The appendices from 19 of the men were inflamed and from 39 of the women. Worms or their eggs were found in 48 of the 103 appendices. They were noted in 5 men and 43 women. Worms were observed in 30 of the 103 specimens. *Oxyuris vermicularis* was noticed in 29 specimens and *Trichocephalus dispar* twice. One appendix contained 40 *oxyurides* and one *trichocephalus*. Only one worm was found in half the specimens. The number of *oxyurides* in the appendix varied from one to 150, while *trichocephalus* occurred singly. The appendix was found inflamed in four of the specimens in which worms were observed. In three of these cases the appendix was removed for acute appendicitis, contained *Oxyuris vermicularis*, and was found to be the seat of ulcerating phlegmonous inflammation. In the other case, *trichocephalus dispar* was found with its head in a worm-canal in the mucous membrane of an appendix removed for acute appendicitis. No inflammatory reaction was observed in the vicinity of the worm-canal, and Matsuoka formed the opinion that the worm had made its way into the mucous membrane already softened secondarily to the inflammation. The eggs of worms were found in the appendices from 33 patients. In fifteen specimens worms were also present. Three specimens contained eggs from two species of worm and one from three species. Eggs of *Trichocephalus* were observed in 33 appendices, eggs of *Oxyuris* in five and eggs of *Ascaris* in five. The appendix was the seat of acute phlegmonous appendicitis in four specimens, showed signs of previous inflammation in three specimens and was apparently normal in 26 specimens.

Twenty-three appendices from 12 male and 11 female persons was examined at autopsy in Edinburgh along with the caecum and neighbouring intestine. Evidence of inflammation was present in nine cases. The inflammation was recent on four occasions. Four of the appendices contained worms, three *Oxyuris vermicularis* and one *Trichocephalus dispar*. The appendix was in each case healthy.

Matsuoka points out that *Oxyuris vermicularis* burrows with its head far into the mucous membrane. It sometimes lies on the surface but is more usually found lying in the follicles or their vicinity. It has been noticed calcified in the submucous layer of the appendix. It occupies a worm-canal with smooth walls. No inflammatory reaction can be noticed around the canal and no signs of any irritative action on the surrounding tissues can be ascertained. The worm bores into the mucous membrane separating the cells of the tissues. In this way a canal is formed in the mucous membrane of the appendix. When the *Oxyuris* leaves the canal, the latter is closed by the regenerative power of the cells of the tissues. *Trichocephalus dispar* lies in a worm-canal just beneath the surface of the mucous membrane. It is not found in a canal lying on the *mucosa*. The walls of the canal are distinct and giant-cell formations have been noted in the walls of the worm-canal.

A study of the clinical histories of patients whose vermiform appendices harbour helminthic parasites shows that slight sensibility to pressure in the ileo-caecal region, especially over MacBurney's point, and spontaneous subjective sensibility to pain characterize the condition. The absence of fever distinguishes the condition of *pseudo-appendicitis zooparasitica* from appendicitis. Apyrexia is, however, not uncommon in true appendicitic attacks. The worms or their eggs may be found in the fæces, but these are sometimes not discovered in the fæces when worms are found later in the appendix. It cannot be denied that worms may irritate the appendix and predispose to appendicitis, but the evidence of this long series of patients and of their appendices reveals the fact that worms are frequently present without any signs of inflammatory disturbance. Apart from appendicitis, the worms may excite symptoms and produce the disease named *pseudo-appendicitis zooparacitica* or *appendicopathia oxyurica*.

The rational treatment of this condition will depend on the views held in regard to its ætiological significance in appendicitis. Cecil and Bulkley advocate appendectomy. French writers, starting with the same premises, arrive at a similar conviction. Matsuoka does not consider appendectomy desirable. Attempts should be made to remove the

[1] *Journ. Path. and Bacteriology*, Vol. XXI., p. 221, April, 1917.

infection with worms by the use of santonin and calomel. The prophylaxis of the disease requires attention. So far little is known of the paths of infection by *Oxyuris vermicularis* and *Trichocephalus dispar*. Their exclusion from the intestines is necessary, and benefit will follow their removal from the human body. The extent to which communities are affected by these worms is not known, and some knowledge of their prevalence must precede steps for their eradication.

## THE FLAVOUR OF BEVERAGES.

The excitation of sensations of taste is of an exceedingly complex nature. It is well known that the sensory conception depends not only on the stimulation of the gustatory nerve-endings by the sapid material, but also on the olfactory sensations induced at the same time. It is not as well known that tactile sensations perceived simultaneously from the lips and tongue, are concerned in the production of gustatory sensations. This fact is illustrated by the effects of the size, shape and materials of drinking vessels on the sensations experienced during the swallowing of beverages. Ale does not seem to have the same flavour when taken in a teacup as when drunk from a silver or pewter tankard. Metal appears to be needed by some persons to bring out the savour of beer, while others insist on the use of the stone-ware mug. Tea served in a tumbler lacks the taste of tea in a porcelain cup. Again, wines as claret and port, do not seem as palatable when partaken from a metal cup. Whatever may be the reasons for the altered sensations, we cannot lose sight of the complexity of the physiological conditions underlying the perception of taste. No physician can afford to neglect the study of these facts and fail to avail himself of their use in feeding the sick. The flow of the salivary and gastric digestive juices is, in part, influenced by the sensations produced by mastication of the food. The service of food and drink in a way calculated to yield the full flavour to each article, will greatly assist the dieting of sick persons.

## THE PUBLIC HEALTH OF NEW SOUTH WALES.

The Annual Report of the Director-General of Public Health of New South Wales for the year 1915, with appendices, was issued in book form early in 1917. The publication is a volume of foolscap size, containing 281 pages. It has been impossible to find space for a notice of so long a report up to the present. The contents of the report include a summary by the Director-General, various reports on the public health administration, a further report on the small-pox epidemic, the reports of the various State hospitals and institutions under the control of the Director-General, and a report from the Microbiological Laboratory.

### Infective Diseases.

*Pulmonary Tuberculosis.*

During the year 1915, 1,122 deaths from pulmonary tuberculosis were registered in the State. The average number for the five preceding years was 1,210. On August 11, 1915, a proclamation was issued, under the *Public Health Amendment Act of 1915*, making pulmonary tuberculosis notifiable in the Metropolitan and Hunter River Combined Sanitary Districts. Previous to this date, the disease was notifiable only in the City of Sydney. The Director-General gives as a reason for the introduction of notification in only a part of the State that the districts chosen were the most populous, and therefore those in which there was most tuberculosis. He adds that in the selected districts there was a Medical Officer of Health, who had the necessary machinery for the administration of the notification clauses of the Act. He states that it is the intention of the Department to make tuberculosis notifiable throughout the whole State "at no distant date." The notification is carried out by medical practitioners, and is secret. It is sent to the Medical Officer of Health or to the Secretary of the Board of Health. The notifying medical practitioner is given the option of deciding whether or not his patient is to be visited by a health officer. In the event of his desiring that the patient shall not be visited, he undertakes to instruct the patient "in the necessary steps for preventing the spread of infection." After the death of a patient or after his ascertained removal to other premises, steps are taken to disinfect the house.

In dealing with the institutional treatment of consumptives, the Director-General refers to the proposal to provide 100 additional beds at the Waterfall Sanatorium, and the proposal to erect a hospital of 300 beds in the neighbourhood of the Coast Hospital.

The accommodation at the Waterfall State Sanatorium includes 366 beds and cots, of which 58 are in the open air. During the year 1915, 578 patients were admitted, 372 patients were discharged, and 176 died. The death-rate was therefore 31.3%, calculated according to the Registrar-General's formula. It appears to us to be advisable, for the sake of uniformity, that all case mortalities should be calculated in the same way. The Medical Superintendent of the Waterfall Sanatorium gives the death-rate as a percentage of the total number of deaths and discharges. While this method is preferable to the common method of calculating the rate as a percentage of the total number of patients under treatment, it is probably inferior to the method selected by the Registrar-General. Of the 372 patients discharged, 94 left the institution with their disease arrested, and 138 left in a much improved condition. Arrest was thus attained in 25.2% and improvement in 37%. No information is given concerning the stage of the disease in any of the patients who were discharged or who died. Moreover, the report deals exclusively with the patients under treatment during the year, and no reference is made to the patients under treatment in previous years. In order to assess the value of sanatorium treatment to the patient and the soundness of expending public money on the institutional treatment of this disease, it becomes necessary to follow the history of patients who have been admitted to the Sanatorium throughout a series of years. The Medical Superintendent states that the number of patients admitted with advanced disease was larger in 1915 than in previous years, and that over 30% of them were suffering from a tubercular affection of the throat. He records an increase in the number of deaths and a diminution in the number of persons whose disease was unimproved by treatment. He complains that, owing to war conditions, he was compelled to do without certain drugs which he had previously regarded as of secondary importance. "Last year's experience shows our helplessness without them." It would be interesting to learn to which drugs he is referring. The average length of stay in the Sanatorium of the patients who were ultimately discharged was 191 days, and of the patients who ultimately died was 201 days. The total cost of maintenance and treatment was £16,841, and the average cost per patient per annum was £40 13s. 7d.

*Variola.*

In the year 1915, 471 cases of variola were notified in the State; in 1913, 1,073 cases, and in 1914, 628 cases had been notified. There were 25 cases in Sydney between January 1 and March 25, 1915. On May 7 the Board determined to recommend the rescission of the Proclamation of November 21, 1914, requiring all persons travelling to another State to report themselves to the Medical Board of Health if they became ill within 21 days of leaving New South Wales. This recommendation was based on the fact that no cases had been reported in the State for more than three weeks. The restrictions were removed on May 18, 1915. Between August and the end of the year, 279 cases were notified in the Newcastle district. The Premiers of Victoria and of Queensland

urged the Government of New South Wales to proclaim Newcastle an infected area. The Board of Health opposed this request on the ground that the disease should be regarded as a notifiable and not quarantinable disease; that, although there had been 2,000 cases, no deaths had resulted primarily from it, and only in three cases had it been mentioned as a contributing factor; that the Department had taken every precaution to prevent the spread of the disease, and that all houses in which cases had occurred had at once been placed in quarantine.

During the year 1915, the Medical Officers of the Department vaccinated 10,169 persons. No information was available concerning the number of persons vaccinated by private practitioners.

*Leprosy.*

Since the year 1890 the segregation of lepers in New South Wales has been compulsory. From 1883 to 1915, 136 persons suffering from this disease had been under treatment. The disease has apparently been arrested in 12 patients, who were accordingly discharged. In addition, 39 Chinese patients have been repatriated. The number of deaths during the 32 years was 64, and consequently the number of patients remaining in the Lazaret was 22. During the course of the year, three fresh patients were admitted, after careful control of the diagnosis. Four patients died, and one patient was discharged. The Acting Medical Superintendent gives the details in connexion with the newly admitted patients, and a brief summary of the clinical histories of those who died or were discharged. In addition, the notes from the Microbiological Laboratory, descriptive of the examination of the materials submitted, are reproduced. From the progress report it appears that chaulmoogra oil is being used, apparently with good results, in the majority of the patients.

*Scarlet Fever.*

The incidence of scarlet fever during the year 1915 was very high, no less than 8,335 cases having been notified. The total number of deaths from this cause was 97, and consequently the case mortality was 1.16%. The incidence was heaviest in November and December. In the Metropolitan Combined District there were 4,724 cases, of which 3,158 were in children under ten years of age, and 1,394 in children under five years of age. Of those under five years of age, 35 died, while three between five and ten years of age died. There were ten deaths of adults. In the Hunter River Combined District there were 272 cases in children under ten years of age, out of a total of 404 cases. There were no deaths. In the remainder of the State 3,207 cases were notified in all, of which 2,145 were in children under ten years of age; 38 of these cases were fatal.

*Enteric Fever.*

As contrasted with scarlet fever, the incidence of enteric fever has decreased very markedly. In 1914, 2,284 were notified, and in 1915 1,941. The improvement in Broken Hill is still more striking. In 1913 there were 217 cases, in 1914 there were 395, and in 1915 there were only 147. The total number of deaths from enteric fever during the year 1915 was 21.9, which is equivalent to a case mortality of 11.28%. In the Hunter River Combined District and in the remainder of the State the incidence was low during the winter months, while in the Metropolitan Combined District there was a very definite rise in the frequency during July. Throughout the State, the disease attacked adults up to the age of 35 years more freely than it attacked children or old people. It occurred in 151 children under five years of age, and was fatal in four cases. The case mortality was therefore 2.6%, which is strikingly lower than the case mortality at all ages.

The Director-General refers to an outbreak which occurred in the early part of the year in the Metropolitan district, which was traced to a bacillus carrier in a local dairy. This epidemic was stayed, as a result of the action taken. He also points out that anti-typhoid vaccination was employed in many persons who were living in a house in which a case had occurred.

*Diphtheria.*

The number of cases of diphtheria notified in New South Wales during 1917 was 5,838. This number is practically the same as that of the cases notified in the preceding year. There were 264 deaths, and consequently the case mortality was 4.52%. Over one-third of the cases were in children under five years of age, and 62.5% of the cases were in children under ten years of age. In the Metropolitan Combined District, the mortality among infants under six months was 50%. In the Hunter River Combined District no children under six months were affected, while in the remainder of the State five out of six infants died. The mortality of all children under five years of age in the Metropolitan Combined District was 8.7%, in the Hunter River Combined District was 4%, and in the remainder of the State 15.6%. No information is given concerning the measures adopted to cope with this widespread and dangerous disease. The source of the disease is readily recognizable, and it should be possible to apply preventive measures which would have the effect either of stamping out the disease or of placing it under control. As will be mentioned in a later part of this summary, the Acting Medical Officer of Health for the Metropolitan Combined Sanitary District states "that the matter of dealing with carriers remains still one difficult of solution at the present time," while the Acting Medical Officer of Health for the Hunter River Combined Sanitary District refers to "a somewhat extensive anti-diphtheria campaign," which he had to conduct in 1914 in the Mackay District of North Queensland, but makes no reference to any systematic endeavour to cope with the disease in New South Wales.

*Poliomyelitis.*

The total number of cases of acute anterior poliomyelitis notified during the year 1915 was 63, while the total number of deaths from this cause was 11. This disease has been notifiable since February 1, 1912. During the first 11 months, 47 cases were notified, while, during 1913 and 1914, 43 and 79 cases were notified respectively. It is obvious that a large proportion of the cases are not recognized during the acute stage, and there is reason to believe that in many cases the assistance of a medical practitioner is not sought.

*Malaria.*

Malaria was pronounced a notifiable disease on March 17, 1915. During the nine and a half months, 105 cases were notified. In 91 instances the infection occurred in members of the Expeditionary Force who were on military or naval duty in New Guinea and other regions where this disease was endemic. In the remaining 14 cases the ague arose within the Commonwealth. The total number of deaths recorded was two. The Director-General States that the reason malaria was made a notifiable disease was "to ascertain the number of cases . . . ., so that a check might be kept on any indigenous cases, if such occurred, and, secondly, so that patients might be advised as to the measures to be adopted against spread of the disease by using mosquito netting, etc." The fact that 14 indigenous cases arose within nine and a half months has been ascertained. No mention is made of the primary reason for introducing notification for an infective disease, *viz.*, that measures may be adopted to arrest its spread. The history of anti-malarial campaigns in the Panama and elsewhere demonstrates that the effective measures for combating this disease are considerably more drastic than advising patients to use mosquito nets. Even if patients were compelled to use nets, the disease would not be stayed, and it is common experience that this form of advice is rarely followed.

*Epidemic Cerebro-Spinal Meningitis.*

There were notified to the Health Department 50 cases of epidemic cerebro-spinal meningitis during the year 1915. Of these, 33 occurred in the Metropolitan Combined District and seven in the remainder of the State. The disease was not notifiable in the Hunter River Combined District prior to October 11, 1915. In the Metropolitan District 14 of the patients were under five years of age. Nine of these children died. The mortality was therefore 64.3%. No children were affected elsewhere. The total number of adults over 19 years of age who were infected was 32, and of these 24 died, or 75%. The total mortality for all ages works out at 66%. It appears that these figures do not include the cases which occurred in soldiers at the Liverpool Military Camp.

*(To be Continued.)*

# Abstracts from Current Medical Literature.

## OPHTHALMOLOGY.

### (56) Primary Sarcoma of Iris.

G. H. Bell tells the history of a man of 80 years who, two years ago, had been struck in the left eye by a Roman-candle ball (*Archives Ophthal.*, September, 1917). There was a dark, nodular mass in the upper nasal quadrant of the anterior chamber, involving the iris. It measured 6 mm. × 3 mm., and was sharply defined. The tension of the eye was 52. The tumour grew slowly till, after seven months, the patient consented to have the eye enucleated. The pathologist reported melano-sarcoma of the iris. Fuchs found 16 primary sarcomata of the iris in 259 cases of sarcoma of the uveal tract, Martin one in 42 cases, Lawford and Treacher Collins one in 103 cases. Fuchs states that small sarcomata of the iris can be removed by iridectomy, but the author thinks that this should be done only for diagnosis. The eye should be enucleated.

### (57) The Ring Magnet.

T. Harrison Butler is satisfied that the ring magnet is superior to the Haab, and has been using it for the past four years (*Brit. Journ. Ophthal.*, January, 1917). It consists of an oval ring, large enough to admit the patient's head. The ring is balanced, and can be used for the patient sitting or lying. The patient lies on the operating table with the ring over his head and the injured eye in the centre. The smallest rod is taken up, held firmly and moved towards the cornea along the anterio-posterior axis of the globe. The rheostat is gradually taken out of action, till the full current is used. Generally, the splinter appears behind the iris, and is coaxed into the anterior chamber. Failing this result, larger rods are used, and, finally, if necessary, the horn is placed in position and the magnet used as a Haab. The pupil must be fully dilated with atropine. When the particle is in the anterior chamber, the current is turned off and an incision made with the keratome, a weak current is turned on, a small spatula introduced and the body removed. It is often necessary to make an incision through the sclera, in which case the spatula is introduced and removes the foreign body.

### (58) Removal of Foreign Bodies by the Giant Magnet.

G. H. Pooley has modified his technique, based on that of Haab, and believes his results are better (*Brit. Journ. Ophthal.*, January, 1917). The foreign body should be carefully localized, even at the expense of some days' delay, and it should be removed from the nearest point. If the lens is badly wounded, and if the foreign body is immediately behind it, the lens should be first removed and then the foreign body through the anterior chamber. If the lens is not wounded and if the foreign body is behind it, the author extracts the foreign body through a scleral incision behind the ciliary body. A trial pull is to be avoided.

### (59) The Technique of the Haab and of Small Magnets.

M. H. Whiting and C. Goulden, making use of their considerable experience during the war in the extraction of magnetic particles from the eye, have elaborated a technique which applies to the majority of cases (*Brit. Journ. Ophthal.*, January, 1917). The method adopted is to draw the particle into the anterior chamber with the Haab magnet, whence it is extracted through a corneal incision by the small magnet. Localization by an X-ray is not essential, and, if it should cause a few hours' delay, should be omitted. The patient should be prepared for taking an anæsthetic, and the pupil well dilated with atropine. Whenever possible, during the use of the Haab, the patient should be seated upright in a chair in front of the magnet, with the eye insensitive after cocaine. The head is supported in the hollow of the surgeon's elbow, who also, with both hands, takes control of the patient's lids and moves the head into any required position. A beam of light is projected into the injured eye from a lamp. The magnet point should be actually in contact with the cornea, slightly above its centre, and the full strength of the current is switched on by depressing the pedal. If the foreign body shows its presence in the posterior chamber by bulging the iris forward, the current must be cut off immediately, and the patient's head so altered that the magnet point is applied to the limbus of the cornea above and out, whereby the particle is drawn into the anterior chamber. The patient is put under general anæsthesia, the cornea incised with a keratome, which is used in such a way as to prevent escape of vitreous. The point of the small magnet is directed outside the cornea, immediately over the foreign body, which is attracted to the posterior surface of the cornea and upwards to the incision. The terminal is depressed on to the wound and the particle withdrawn. If this method is impracticable, the terminal is introduced into the corneal section, passed down to the foreign body and the current is then switched on. The particle is gently drawn out. Various complications are described in detail, together with the best way of dealing with them.

### (60) Binocular Metamorphopsia.

J. A. Lippincott bases his remarks and conclusions on the following three rules, *viz.*, (1) the greater the convergence required to fix an object the nearer, and the less the convergence the more remote the object appears; (2) the effect of convex lenses, spherical or cylindrical, is to make the object appear nearer, and the effect of concave glasses is to make them appear more remote; and (3) when an object seems more distant than it really is, it appears larger, and when it seems to be nearer than it is it appears smaller (*Archives Ophthal.*, September, 1917). Group I.—Effects of cylindrical glasses with axes vertical. In looking at a square card through unequal cylinders with axes vertical, the binocular image is a trapezoid, with the upper and lower borders non-parallel, and the side near the eye with the higher lens higher than the other. Group II.—Effects of spherical glasses. The fused image appears higher on the side with the higher lens. Group III.—Effect of cylinders with axes horizontal. The fused image appears lower on the side of the higher lens. Group IV.—Effects of cylinders with axes oblique. With plus cylinders, axes inwards at the top, a square assumes the form of a trapezium, wider at the top than at the bottom; with the axes outwards at the top, the binocular image is narrower below. In the case of concave cylinders, the conditions are reversed. A vertical line, looked at with a convex oblique cylinder, appears oblique in a contrary direction to the axis of the cylinder; with a concave cylinder the obliquity is in a similar direction to the axis of the cylinder. This may be explained by considering a cylinder as consisting of two prisms, base to base in the case of the convex cylinder and edge to edge in the case of the concave cylinder. Group V.—Effect of prisms on the outline of objects. The square card, looked at with a prism base outwards before one eye and nothing before the other, appears with its side near the eye with the prism higher than the other side; if the prism is base inwards the side is lower. Group VI.—Effects of prisms on the appearance of surfaces. Adducting prisms (bases out) cause a surface to appear hollowed out like a bowl, while abducting prisms (bases in) produce the appearance of a protuberance or hump. The depth of the pit can be calculated by a formula. The condition giving rise to binocular metamorphopsia is a disturbance in the relation between direct and indirect convergence arising from dissimilarity between the uniocular images. Different theories explain the change from binocular metamorphopsia to binocular orthomorphopsia. They tell, in other words, how the ametrope and especially the anisometrope, get accustomed to and see clearly with their glasses. There are two conflicting theories of vision, styled nativistic and empiritic. According to the first, each of the retinal percipient units corresponds to a definite direction in space; but, according to the empiristic conception, projection is not a function of the retina, but of the subconscious brain centres. In the author's judgement, the empiristic theory more satisfactorily explains the development of orthomorphopsia.

## LARYNGOLOGY AND OTOLOGY.

### (61) The Lingual Tonsil.

Varicose veins and hypertrophy are held by Herman B. Cohen (*Laryngoscope*, September, 1917) to be the commonest affections of the lingual tonsil. Deep and superficial varicose veins appear in a fan-shaped distribution over

the base of the tongue, and cause neuroses in that situation by pressure on the lingual nerve. Varix is an evidence of disturbed circulation. Infectious inflammation of the pharynx and of the faucial tonsils, infection of the lymphoid tissue of the lingual tonsil, constitutional or acquired debility of the vasomotor system, menopause changes, hepatic cirrhoses and chronic intestinal disturbance are all held responsible. The symptoms of the two conditions are practically alike, cough, sensation of a foreign body, paræsthenia, voice changes, hæmorrhage and respiratory distress. In inflammatory conditions there is constant pain at the root of the tongue, and irritation of the structures at the entrance of the larynx causes frequent coughing. Pain on swallowing may be due to swollen suprahyoid and submaxillary glands. Hæmorrhage is a frequent symptom of varix, but is rarely profuse. It often occurs on rising from bed, and does not produce anæmia. The neurotic element is present in these patients, the slightest depression or exhaustion precipitating symptoms. The author holds hypertrophy to be due to repeated or continued infection of the lymph structures of the pharynx, fauces and pharyngeal tonsils, originating from infectious and constitutional diseases, from repeated contact with surrounding structures, and from irritating foodstuffs, acids and gases. The treatment includes removal of the sources of irritation, *e.g.*, alcohol, tobacco, condiments, and hot foods. Potassium iodide and mercury may prove useful. Locally, adenalin, cocaine or eucaine and silver nitrate 12½% to 25%, may be employed for varix. Silver nitrate or the cautery is useful in slight hypertrophic conditions. Menthol in olive oil, 2.5%, glycerole of iodine (iodine, 12 to 16, potassium iodide, 24 to 32, glyerine, 480), and tincture of iodine are all efficacious. If there is no improvement after treatment thrice weekly for three weeks, recourse should be had to operative measures, and a complete removal effected, either with curved scissors or preferably the lingual tonsillotome. The wound should be massaged with a cotton applicator dipped in a mixture of equal parts of glycerin, tincture of iodine and tincture of chloride of iron every 24 hours.

### (62) Anatomy of the Septum.

Some new points in the anatomy of the nasal septum have been described by J. L. Aymard (*Journal of Anatomy*, April, 1917). He states that the upper lateral cartilages of the nose are not separate cartilages, as usually described, with the anterior part of the superior free edge of the perpendicular cartilaginous plate embedded between their mesial borders, but they are really expansions of that plate. These expansions together form a triangular sheet, with the base attached to the anterior edges of the nasal bones and the apex at the superior angle of the anterior free border of the perpendicular plate, and are not separable from that cartilage, except by force. The posterior border of the *lamina perpendicularis* of this cartilage is firmly attached to the anterior edge of the perpendicular plate of the ethmoid, and its perichrondrium is directly continuous with the periosteum of the latter. The inferior border is pear-shaped in section. In its posterior two-thirds, where it rests in the vomeral groove, it is oval, in its anterior third, where it meets the *crista maxillaris*, it is flattened, and terminates in an obtuse angle. The joints that it forms with these two structures permit movement through a complete semi-circle, limited to a right angle on each side of the perpendicular. The author believes it to be the only movable joint entirely composed of cartilage on the one hand and a bone not covered with cartilage on the other, and the only joint in the body permitting such extensive movements. Pressure upon the anterior superior surface of the septal cartilage causes it to bend in the direction of its long axis. Pressure upon the anterior inferior border causes the cartilage to bend obliquely on itself with a certain amount of transverse movement across the chrondro-maxillary joint. The definite object of the chrondro-vomeral joint is without doubt to allow of free lateral movement when pressure is applied from above. An apparent object of the chrondro-maxillary joint is to allow lateral rotation as well as a diagonal lock-gate motion. The perichrondrium on the two sides of the perpendicular cartilage is continuous round its lower border, and is firmly adherent to the cartilage, except below. The periosteum on the two sides of the bones taking part in the septal joints is also continuous over the vomeral groove and maxillary crest, and is but loosely attached to the bone. Processes of periosteum from both sides of the vomeral groove merge with the perichrondrium, and there are similar down-growths from the perichrondrium, the two forming a joint ligament. A concussion-pad of fat separates the perichrondrium from the periosteum in the joint, and more fat is found beneath the periosteum in the vomeral groove. The perichrondrium and periosteum are about equally adherent to the mucous membrane, being closely attached, except over the anterior third of the cartilage. The author has been able to separate but two layers of the perichrondrium by mechanical means. He recognizes three layers in the mucosa, between the inner two of which run the large vessels and nerves. The coverings and membranous folds of the chrondro-maxillary joint are similar to those of the chrondro-vomeral, but tougher, looser, and thicker. The pear-shaped lower border of the perpendicular cartilage, as well as the portion anterior to it, is wholly occupied by a complete system of canals containing blood-vessels, which arise from the mucous membrane and penetrate the perichrondrium. These canals are very characteristic and distinctive, and their orifices open in an irregular line along the lower border of the perpendicular cartilage, above the joints, where the perichrondrium is still firmly adherent to the cartilage. The canals do not communicate with each other, the vessels entering and returning by the same orifice. They present rounded ends and seldom project when branched beyond the centre of the cartilage. Single straight canals, however, can frequently be seen passing across the upper portions of the cartilage. The costal cartilages possess a vascular system precisely similar, and both correspond exactly with the vascular canal system of fœtal cartilage, with the exception that the ends of the canals are more pointed and branched in the latter. The author remarks that, if the coverings of the cartilage are removed upon both sides at the chrondro-maxillary joint, the complete internal blood-supply of this thickened piece of cartilage will be found destroyed. He asks what eventually becomes of this pillar base which is left by the surgeon for cosmetic purposes.

### (63). Incidence of Ozœna.

Basing his conclusions on the findings in many thousands of cases, J. N. Roy holds that ozœna is an infectious disease occurring in all races, but the disease is less frequent among the white races, and is most prevalent among the yellow races (*Journ. Laryng., Rhin., Otology*, September, 1917). The marked deviation of the septum in these latter people, together with their state of habitual uncleanliness and nasal irritation, produces in their mucous membrane a splendid breeding-ground for the microbes. The blacks of Africa, Oceania, and the West Indies are not yet infected, although they are susceptible to the disease.

### (64) To Open a Mouth.

An invariably successful method for inducing a child to open its clenched jaws is practised at Chevalier Jackson's Clinic (*Laryngoscope*, November, 1917). By introducing a bent probe, 20 cm. long, at a gap between or posterior to the teeth, and inserting it until the distal end reaches down back of the tongue near the epiglottis, the jaws and mouth immediately open and a bite block or gag can be slipped in.

### (65) Deafness After Bomb Explosion.

A case illustrating the effects of modern high explosives on the ear is described by Macleod Yearsley (*Journ. Laryng., Rhin., Otology*, September, 1917). A bomb exploded a few yards on the left of a woman, and immediately afterwards she found herself markedly deaf, especially in the left ear, with loud ringing tinnitus. The tinnitus had almost disappeared in 24 hours, but the deafness persisted, especially for low tones and distant sounds. There was no vertigo. The tympanic membranes were found to be markedly indrawn. Functional tests indicated a middle-ear condition, showing increased bone-conduction and loss of low tones, but not a very marked or long-standing one. Rinné's test was still positive, and bone-conduction only very slightly increased. The labyrinth was not implicated. Hearing gradually improved, and a month later a whisper was heard 4.5 m. with either ear. The author regards it as exceptional for the labyrinth to escape damage.

# Medical Societies.

(Affiliated with the British Medical Association).

## NORTHERN DISTRICT MEDICAL ASSOCIATION OF NEW SOUTH WALES.

The annual meeting of the Northern District Medical Association was held at the Armidale Hospital, Armidale, New South Wales, on January 30, 1918, Dr. W. E. Harris, the President, in the chair.

Dr. E. B. L. Fitzpatrick, of Mungindi, and Dr. C. A. F. Clark, of Manilla, were elected members.

The Honorary Secretary read the annual report. The Treasurer's report and balance sheet was presented and adopted.

The following were elected office-bearers and members of the Committee:—

*President*: Dr. R. M. Farrell (Quirindi).

*Vice-President*: Dr. J. W. F. McKee (Uralla).

*Honorary Secretary and Treasurer*: Dr. E. W. Buckley (Tamworth).

*Members of the Committee*: Drs. R. Balls, H. L. Harris, W. E. Harris, R. M. Kinross, A. J. Mackenzie, T. P. McKell, B. L. Middleton, J. A. J. Murray, E. L. Newman, A. J. Park, G. Riolo, W. Ritchie, C. H. Scott, A. Campbell Smith, L. M. Snow, F. S. Stuckey, G. P. Stanley, M. M. Vernon and F. H. Wrigley.

Dr. L. E. Ellis was elected Delegate to attend the annual meeting of delegates of the local Associations with the Council of the New South Wales Branch, and Representative, and Dr. J. P. Sexton, of Tamworth, was elected Honorary Auditor.

It was resolved that £15 should be contributed to Australian Army Medical Corps Comforts Fund.

The Honorary Secretary was requested to convey the sympathy of the Association to Dr. Wrigley, who had recently been very ill.

A letter from Dr. A. E. R. Bligh, the Honorary Secretary of the Northern Suburbs Medical Association, dealing with the question of assistance to medical practitioners incapacitated while on active service, was considered, and it was decided that the Association approve of the suggestions contained.

Dr. E. W. Buckley read a paper by Dr. T. S. Douglas on two cases diagnosed as sciatica.

A discussion took place and a vote of thanks was accorded Dr. Douglas for his interesting paper.

Dr. E. W. Buckley read a paper on acute hepatic toxæmia of the liver and a second one on *placenta praevia*.

A vote of thanks was passed to Dr. Buckley.

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The undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:—

Frederick William Liggins, M.B., 1917 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown, N.S.W.

Archibald John Collins, M.B., Ch.M., 1913 (Univ. Sydney), "Rockwood," Hilda Street, Wahroonga, N.S.W.

# Naval and Military.

## CASUALTIES.

We regret to learn from the 382nd list of casualties that Major Maurice Buchan Johnson, Major Walter John Westcott Close, and Captain George Leigh Tomlinson are all seriously ill.

## APPOINTMENTS.

The following appointments, promotions, etc., made in the Australian Imperial Force, have been announced in the *Commonwealth of Australia Gazette*, No. 15, of February 7, 1918:—

### Army Medical Corps.

Lieutenant-Colonel (Honorary Colonel) A. E. Shepherd, from No. 8 Field Ambulance, to be Assistant Director Medical Services, 2nd Australian Division, and is granted the temporary rank of Colonel whilst holding the appointment, 12th October, 1917.

Major (temporary Lieutenant-Colonel) A. L. Dawson, from temporarily commanding No. 1 Light Horse Field Ambulance, to be Deputy Assistant Director Medical Services, Australian Headquarters, Egypt, 17th June, 1917.

To be Colonel—

Lieutenant-Colonel (temporary) C. T. C. de Crespigny, D.S.O., 18th September, 1917.

Lieutenant-Colonel W. E. Summons to command No. 14 Australian General Hospital, and is granted the temporary rank of Colonel whilst commanding, 27th September, 1917.

Lieutenant-Colonel (temporary Colonel) R. M. Downes, Assistant Director Medical Services, Australian and New Zealand Mounted Division and Australian Imperial Force in Egypt, 20th February, 1917.

Lieutenant-Colonel (temporary Colonel) R. M. Downes resumed duty as Assistant Director Medical Services, Australian and New Zealand Mounted Division, in addition to duties of Assistant Director Medical Services, Australian Imperial Force in Egypt, 17th June, 1917.

To be Lieutenant-Colonels—

Majors (temporary Lieutenant-Colonels) C. J. Martin, S. R. Burston, Majors F. H. Makin, C. E. Dennis, Major (temporary Lieutenant-Colonels) D. A. Cameron, H. C. Taylor-Young, Major G. Roffan, Major (temporary Lieutenant-Colonel) J. C. Storey, P. Fiaschi, E. R. White, W. E. Grigor, 18th September, 1917; W. E. Kay, C. Yeatman, C. E. Wassell, E. T. Brennan, M.C., J. J. Nicholas, R. W. Chambers, B. M. Sutherland, R. D. Campbell, D.S.O., C. W. Thompson, M.C., 19th September, 1917.

Lieutenant-Colonel T. P. Dunhill, Australian Army Medical Corps Reserve, to be Lieutenant-Colonel, and is posted for duty with No. 1 Australian General Hospital, 1st September, 1917.

Major J. H. Anderson is granted temporary rank of Lieutenant-Colonel whilst Assistant Director Medical Services, Administrative Headquarters, Australian Imperial Force, 22nd August, 1917.

Major (now Lieutenant-Colonel) S. R. Burston, from No. 11 Field Aumbulance, to be Staff Medical Officer, Australian Base Depôts, and is granted the temporary rank of Lieutenant-Colonel whilst so employed, 30th June, 1917. (This cancels notification regarding this officer published in Executive Minute 830, promulgated in *Commonwealth of Australia Gazette*, No. 222, dated 27th December, 1917.

Major (temporary Lieutenant-Colonel) W. L. Kirkwood, 18th September, 1917.

Major E. A. H. Russell, Major W. E. L. H. Crowther, 21st October, 1917.

Major (temporary Lieutenant-Colonel) A. L. Dawson, Deputy Assistant Director Medical Services, Australian Headquarters, Egypt, 18th September, 1917.

Major (temporary Lietenant-Colonel) E. R. White to command the 2nd Light Horse Field Ambulance, 20th June, 1917.

Major M. W. Cave, from Deputy Assistant Director Medical Services, Australian Mounted Division, is posted to command No. 1 Light Horse Field Ambulance, and granted the temporary rank of Lieutenant-Colonel whilst so employed, 7th August, 1917.

Major W. L. Kirkwood is granted the temporary rank of Lieutenant-Colonel whilst commanding No. 2 Australian Stationary Hospital, 27th August, 1917.

Major A. C. Arnold is granted the temporary rank of Lieutenant-Colonel whilst commanding Australian Camel Field Ambulance, 27th August, 1917.

Major C. W. Thompson, M.C., relinquished appointment of Deputy Assistant Director Medical Services, 2nd Anzac Corps, on 22nd August, 1917, and is posted to command No. 14 Field Ambu-

lance, and granted the temporary rank of Lieutenant-Colonel whilst commanding, 14th September, 1917.

Major E. F. Lind, from No. 9 Field Ambulance, to be Deputy Assistant Director Medical Services, 2nd Anzac Corps, 22nd August, 1917.

To be Major—

Major (temporarily) E. W. Fairfax, Australian Army Medical Corps. Dated 1st May, 1917. (This cancels the notification respecting the officer which appeared in Executive Minute No. 350/1917, promulgated on page 1234 of *Commonwealth of Australia Gazette*, No. 82, of 7th June, 1917.

Captain A. J. Cahill, 24th August, 1917.

To be Major (temporarily)—

Honorary Captain F. S. Scott, Australian Army Medical Corps Reserve. Dated 13th October, 1916.

John James O'Keefe. Dated 17th January, 1918.

To be Captains—

Captain C. C. Marshall, Australian Army Medical Corps. Dated 7th January, 1918.

Captain (provisional) H. G. Humphries, Australian Army Medical Corps. Dated 7th January, 1918.

Honorary Captain C. R. Lister, Australian Army Medical Corps Reserve. Dated 27th December, 1917.

Honorary Captain A. N. Yuille, Australian Army Medical Corps Reserve. Dated 17th January, 1918.

Captain J. E. Streeter, 2nd Infantry (Kennedy Regiment). Dated 20th December, 1917.

Lieutenant (provisional) C. Dinwoodie, Melbourne University Rifles. Dated 2nd January, 1918.

Clarence Cecil Hains. Dated 17th December, 1917.

Alec. Hutcheson Baldwin and Frank McCallum. Dated 19th December, 1917.

Ernest Harold Britten. Dated 27th December, 1917.

Arthur Herbert Crowley. Dated 16th January, 1918.

Walter Andrew Luke and Michael Henry O'Sullivan. Dated 21st January, 1918.

Stanley Wilson Shields. Dated 22nd January, 1918.

To be Lieutenant—

Honorary Lieutenant F. R. Crouch, Australian Army Medical Corps Reserve. Dated 10th January, 1918.

Termination of Appointments.

The appointments of the undermentioned officers in the Australian Imperial Force has been announced as terminated from the dates stated opposite the names:—

Colonel Sir A. MacCormick—25th February, 1918.

Lieutenant-Colonel C. T. C. de Crespigny, D.S.O.—13th January, 1918.

Lieutenant-Colonel A. H. Tebbutt, D.S.O.—1st January, 1918

Lieutenant-Colonel W. A. Fraser, D.S.O.—4th January, 1918.

Lieutenant-Colonel C. C. MacKnight—18th January, 1918.

Lieutenant-Colonel J. J. Black, D.S.O.—25th February, 1918.

Major B. Ingram—18th January, 1918.

Major J. W. Browne—25th December, 1917.

Major R. S. Whitford—1st January, 1918.

Major I. M. Bourke—18th January, 1918.

Major E. H. Burkitt—5th December, 1917.

Major (temporary) F. S. Scott—30th December, 1917.

Major C. S. Browne—3rd December, 1917. (This cancels the notification respecting termination of appointment of Captain C. S. Browne which appeared in Executive Miniute No. 832/1917, promulgated on page 3419 of *Commonwealth of Australia Gazette* No. 222, of 27th December, 1917.)

Major H. Pern—3rd December, 1917. (This cancels the notification respecting termination of appointment of Captain H. Pern which appeared in Executive Minute No. 832/1917, promulgated on page 3419 of *Commonwealth of Australia Gazette* No. 222, of 27th December, 1917.)

Captain B. M. Sampson—12th January, 1918.

Captain A. K. Gault—12th January, 1918.

Captain W. H. A. Pye—25th October, 1917. (This cancels the notification respecting termination of appointment of Honorary Captain W. H. A. Pye which appeared in Executive Minute No. 763/1917, promulgated on page 2987 of *Commonwealth of Australia Gazette*, No. 195, of 15th November, 1917.)

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### Australian Naval and Military Expeditionary Force.

The following appointments have been made in the Australian Naval and Military Expeditionary Force, to take effect from the dates stated opposite the names:—

#### Army Medical Corps.

To be Captains—

William Robert Thrower. Dated 12th November, 1917.

Henry Vicars Gillies. Dated 13th November, 1917.

To be Honorary Lieutenant—

Honorary Lieutenant A. F. Bolton, Australian Army Medical Corps Rserve. Dated 8th December, 1917.

Termination of Appointment.

The appointment of the undermentioned officer is terminated from date stated opposite name:—

Major W. G. Forde—14th May, 1917.

### Australian Military Forces.

The following changes in connexion with the Australian Military Forces have been announced in the *Commonwealth of Australia Gazette* No. 15, of February 7, 1918:—

1st Military District.

Australian Army Medical Corps Reserve—

Michael Joseph Gallagher is Honorary Captain. Dated 8th April, 1915.

Honorary Major E. Priestley is transferred to 2nd Military District, with seniority as from date of transfer. Dated 1st December, 1917.

2nd Military District.

Australian Army Medical Corps—

Honorary Captain J. S. Campbell is transferred from Australian Army Medical Corps Reserve, and is Captain (provisionally and temporarily). Dated 1st December, 1917

The appointment of Major (temporary Colonel) E. S. Stokes as Principal Medical Officer (temporarily) is terminated. Dated 10th January, 1918. (This cancels the notification respecting this officer which appeared in Executive Minute No. 8/1918, promulgated on page 38 of *Commonwealth of Australia Gazette* No. 4, of 12th January, 1918.)

The appointment of Lieutenant-Colonel G. L. Mullins as Officer Commanding No. 4 Australian General Hospital (temporarily) is terminated. Dated 15th January, 1918. (This cancels the notification respecting this officer which appeared in Executive Minute No. 8/1918, promulgated on page 38 of *Commonwealth of Australia Gazette*, No. 4, of 12th January, 1918.)

The appointment of Captain (provisional) (temporary Major) F. E. Wall as Registrar No. 4 Australian General Hospital (temporarily) is terminated. Dated 14th January, 1918. (This cancels the notification respecting this officer which appeared in Executive Minute No. 8/1918, promulgated on page 38 of *Commonwealth of Australia Gazette*, No. 4, of 12th January, 1918.)

Australian Army Medical Corps Reserve—

Clive Nigel Smith is Honorary Captain. Dated 19th April, 1915.

Eric Mortley Fisher is Honorary Captain. Dated 20th April 1915.

Charles Herbert Wesley is Honorary Captain. Dated 29th May, 1915.

Edward Hamilton Rutledge is Honorary Captain. Dated 18th June, 1915.

Austin Sydney Curtin is Honorary Captain. Dated 1st July, 1915.

Idris Morgan is Honorary Captain. Dated 20th August, 1915.

Eric Pitty Barbour is Honorary Captain. Dated 9th September, 1915.

Charles Cosgrove is Honorary Captain. Dated 14th September, 1915.

Wilmot Fenwick is Honorary Captain. Dated 21st September, 1915.

Alfred Meillon Langan is Honorary Captain. Dated 1st October, 1915.

Arthur Edward Mách'n is Honorary Captain. Dated 6th October, 1915.

Kenneth Firth Vickery is Honorary Captain. Dated 9th October, 1915.

Rupert Duffy Heggaton and Charles Michael O'Halloran are Honorary Captains. Dated 20th October, 1915.

Frank Boothroyd is Honorary Captain. Dated 27th October, 1915.

Arthur Herbert Joyce is Honorary Captain. Dated 2nd November, 1915.

Hugh Rayson, Robert Elbury Jefferie, Sydney Michael O'Riordan, and John Thomas Jones are Honorary Captains. Dated 24th November, 1915.

Stanley Roy Stafford is Honorary Captain. Dated 14th December, 1915.

John George Hunter and Fritz Peter Max Solling are Honorary Captains. Dated 20th December, 1915.

Robert Harvey Leeds is Honorary Captain. Dated 22nd December, 1915.

Hugh Edward Kirkland is Honorary Captain. Dated 11th January, 1916.

Theodore William Van Epen is Honorary Captain. Dated 1st February, 1916.

Bertram Van Someren is Honorary Captain. Dated 8th February, 1916.

Edward Hamilton Loxton is Honorary Captain. Dated 15th February, 1916.

Keith Shelly Parker is Honorary Captain. Dated 16th February, 1916.

Paul Ernest Voss is Honorary Captain. Dated 21st February, 1916.

Stanley Vincent O'Regan is Honorary Captain. Dated 6th April, 1916.

Harold Picton Clark is Honorary Captain. Dated 4th December, 1917.

Jack McFadzean Rossell and Robert Murrell Allport are Honorary Captains. Dated 6th December, 1917.

Claude Phillip Jackson and Thornleigh Farranridge are Honorary Captains. Dated 8th December, 1917.

Charles Aloysius Burfitt is Honorary Captain. Dated 13th December, 1917.

Edward Ludowici is Honorary Captain. Dated 17th December, 1917.

Reginald Francis Matters, James Adolph Gruen and Charles Badham are Honorary Captains. Dated 18th December, 1917.

Theophilus Linnell O'Reilly is Honorary Captain. Dated 14th January, 1918.

Lieutenant G. B. Lowe is transferred from Sydney University Scouts and is Honorary Captain. Dated 6th September, 1915.

Lieutenant (provisional) C. F. Robinson is transferred from 33rd Infantry and is Honorary Captain. Dated 25th October, 1915.

Honorary Lieutenant H. L. Tooth is transferred from Reserve of Officers and is Honorary Captain. Dated 25th October, 1915.

Honorary Majors E. J. Jenkins and R. Scot-Skirving are transferred from Reserve of Officers and are Honorary Majors. Dated 1st January, 1918.

Honorary Major H. Priestley is transferred from 1st Military District, with seniority as from date of transfer. Dated 1st December, 1917.

5th Military District.

Australian Army Medical Corps—

Honorary Captain E. C. East is transferred from Australian Army Medical Corps Reserve and is Captain (temporarily). Dated 16th January, 1918.

Australian Army Medical Corps Reserve—

Honorary Lieutenant S. D. Eden is Honorary Captain (temporarily). Dated 15th January, 1918.

6th Military District.

Australian Army Medical Corps—

Captain (Honorary Major) J. Sprent, M.C., is member of Permanent Medical Referee Board with temporary rank and pay of Major at rate prescribed by Financial Allowance Regulation 340 (part-time). Dated 12th December, 1917.

Australian Army Medical Corps Reserve—

Honorary Lieutenants R. C. Oliver and R. F. Tynan are Honorary Captains (temporarily). Dated 15th January, 1918.

# Public Health.

## NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the fortnight ending February 2, 1918:—

| | Metropolitan Combined District. | | Hunter River Combined District. | | Rest of State. | | Total. | |
|---|---|---|---|---|---|---|---|---|
| | Cs. | Dths. | Cs. | Dths. | Cs. | Dths. | Cs. | Dths. |
| Enteric Fever | 14 | 1 | 6 | 0 | 35 | 5 | 55 | 6 |
| Scarlatina | 23 | 0 | 2 | 0 | 12 | 1 | 37 | 1 |
| Diphtheria | 62 | 2 | 9 | 0 | 50 | 0 | 121 | 2 |
| C'bro-Sp'l Menin. | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 |
| Poliomyelitis | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Pul. Tuberculosis | 43 | 15 | 1 | 0 | 0 | 0 | 44 | 15 |
| Malaria | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

## VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending February 3, 1918:—

| | Metropolitan. | | Rest of State. | | Total. | |
|---|---|---|---|---|---|---|
| | Cs. | Dths. | Cs. | Dths. | Cs. | Dths. |
| Diphtheria | 42 | 2 | 31 | 1 | 73 | 3 |
| Scarlatina | 9 | 1 | 5 | 0 | 14 | 1 |
| Enteric Fever | 5 | 0 | 10 | 2 | 15 | 2 |
| Pulmonary Tuberculosis | 17 | 5 | 13 | 1 | 30 | 6 |
| C'bro-Spinal Meningitis | 0 | — | 2 | — | 2 | — |
| Poliomyelitis | 4 | — | 4 | — | 8 | — |

## QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, for the week ending February 2, 1918:—

| Disease. | No. of Cases. |
|---|---|
| Diphtheria | 38 |
| Pulmonary Tuberculosis | 5 |
| Scarlatina | 3 |
| Erysipelas | 4 |
| Enteric Fever | 18 |
| Cerebro-Spinal Meningitis | 1 |
| Puerperal Fever | 1 |

# Special Correspondence.

(By our Special Correspondent.)

## LONDON LETTER.

### The New Ministry of Health.

The scheme for the establishment of a ministry of health is said to be now under serious consideration. It has already been approved of and adopted by the Standing Joint Committee of approved Societies, the Emergency Committee of the National Association of Insurance Committees for England and Wales, and by the Faculty of

Insurance, covering the whole of the 12,000,000 insured persons in this country.

According to a well-informed press correspondent, the scheme proposes that the main factors in the new ministry to be comprised in it from the outset should be a combination of the existing public health functions of the Local Government Board, the functions of the National Insurance Commissioners for England and Wales; the maternity and infant welfare functions of the Board of Education; the midwifery functions of the Privy Council; and the new functions in respect of the training of the blind to be set going in accordance with the report of the recent committee. There should also be brought in at the earliest possible moment certain other public health functions of the Local Government Board, the Board of Education functions in respect of crêches, the functions of the Registrar-General (*i.e.*, vital statistics, etc.), the Home Office functions as to inspection of factories and the appointment of certifying surgeons under the Factory Acts, and the functions of the Board of Control, especially as these are concerned with the care of the insane and mentally defective. Lastly, there should be brought into the new ministry, at whatever stage may be found most expedient, the remaining public health functions of the Local Government Board, particularly housing; the same department's supervision of the medical side of the Poor Law, and the supervision of the treatment of the discharged sailors and soldiers at present under the Ministry of Pensions.

Since it is essential for the new ministry of health to be established by Parliament under a minister responsible to Parliament, it follows that the powers and duties of the Health Insurance Commissioners must be transferred by the Bill to that minister. The minister should, however, constantly have advice and guidance from a special body to be appointed for the purpose by Order in Council, comprising persons having practical experience of National Health Insurance work. Secondly, the Bill should provide that the judicial and quasi-judicial powers and duties of the Insurance Commissioners shall not be transferred to the minister, but shall be vested, and exercised by a special body to be appointed for the purpose by Order in Council, whose decisions on these matters shall be final, and not subject to review by the minister, or by any court of law; an arrangement which would be in conformity with the present practice and the conditions established under the Act of 1911 and the Treasury Minute.

It is also urged that the Ministry of Health Bill shall be accompanied or immediately followed by an enabling measure giving new powers to the various local bodies for providing all kinds of medical and analogous services for the people, alike in rural and urban areas, on lines indicated and subsidized for the purpose by the new ministry.

### Pensions for Officers and Nurses.

The draft of a Royal Warrant for the retired pay of disabled officers, for the pensions of the families and relations of deceased officers, and for the pensions of nurses disabled in the war, was issued by the Ministry of Pensions on July 14, 1917.

According to the Warrant, the retired pay to temporary officers will be assessed according to the degree of physical impairment on a scale of tenths. The rates for the highest degree of disablement are more favourable than the present rates in all ranks. Officers holding permanent commissions in the regular Army will in future receive, in addition to what they are entitled to for disability under the Pay Warrant of 1914, an allowance varying with the degree of their disablement. This allowance may also be added to the pension which an officer has received for service in the ranks. The same pension is to be given in future whether the disability was caused by service or only aggravated by it. Provision is made for an officer becoming disabled after the war by services in the war.

In addition to retired pay, a disabled officer of small means may be granted education allowances for his children over the age of nine up to a maximum of £50 a year for each child.

The existing rates of widows' pensions and children's allowances are considered sufficiently liberal, but the opportunity has been taken to grade the rates for the different ranks of general officers. The age for educational allowances, granted in cases of pecuniary need, is reduced from 13 to 9, and the maximum grant increased to £35 a year for girls. Widows will receive gratuities in addition to pensions for themselves and their children under the same terms as at present.

Special provision for motherless children, omitted from the 1915 Warrant, is re-introduced.

The provisions for nurses follow generally those for officers, and are on a very much more liberal scale than the existing regulations. Thus, a staff-nurse totally disabled through war service, will receive £100 a year as compared with £40 at present; and there are special grants for sanatorium or hospital treatment, for training, for medical expenses, and for constant attendance.

### Academic Work and Industrial Research.

Mr. W. H. Perkins, the Waynflete Professor of Chemistry at Oxford University, delivered an interesting address on August 7, 1917, at the Oxford summer meeting.

He said they knew that certain industries, which were at one time firmly established in this country, had left them to flourish abroad, and inquiry into the reason for this resulted in the conclusion that the cause of our failure had been our neglect of scientific methods, and lack of appreciation of the value of research. At the commencement of the war, Germany had ten times as many advanced students engaged in research work as there were in this country. They could not hope to compete with Germany while such a state of things existed, and it was entirely due to our lack of appreciation of the importance of research that so many of our industries had already gone to Germany, and so many were in process of being transformed when the war broke out. There were many of opinion that, if Germany had only had the wisdom to keep out of the war, and had been content to push on along the lines of scientific efficiency which she had successfully pursued during so many years, aided by her power of organization in the matter of detail, she must have soon acquired the industrial supremacy of the world. It was amazing that England allowed so many, and such valuable industries to pass into the hands of the foreigner almost without a struggle, and that we should have so easily and rapidly accustomed ourselves to the everyday use of things made in Germany which might equally well have been made here. But, having discovered how such things were made, and how profitable their manufacture was, we would take care in the future to profit by the bitter experience of the past, put our backs to the wall, and make every effort to retain essential processes in our hands. In tackling and solving difficult manufacturing operations it was not too much to claim that the scientific men in our Universities had shown how valuable they could be to the manufacturers, whether in connexion with munitions of war or in the development of purely industrial operations, and it was refreshing to see how highly their efforts had been appreciated in every quarter. There could be no doubt that the war had already brought about this welcome change—that a much closer association between the manufacturer and the scientific worker was growing up, such, indeed, as had not previously existed in this country. There were, of course, not a few who were afraid that the introduction of work of industrial importance into our Universities, and especially into such Universities as those of Oxford and Cambridge, would have a bad effect on those institutions. They feared that the lofty academic spirit which had always pervaded our older Universities, would suffer from contact with the realities of commercial life, and while he could understand the suspicion which was always associated with any radical change in old-established traditions, he failed entirely to see why the introduction into the students' career of some of the conditions of the life which so many must ultimately adopt, should be in any way prejudicial. He was certain that purely academic work and industrial research could go along side by side to their great mutual advantage.

## Correspondence.

### TO FURTHER RECRUITING.

Sir,—May I be pardoned for suggesting that we should first put our own house in order before attempting to influ-

ence recruiting from the public. There are on the other side some hundreds of military medical officers, from colonels to captains, who have been out on their country's service for periods up to more than three years. There are on this side military medical officers, from colonels to captains, who are capable of relieving those who have made great sacrifices. Those here have not only made no sacrifice, but the fact that the others are away has been to them a distinct financial gain, and, in addition, they occupy senior positions (with pay) in the military hospitals.

Is it not up to them to do a bit of sacrifice and give those to whom the call of patriotism was greater than that of the pocket a chance of return to their native land? The military hospital positions could be as efficiently filled by those retutrning and returned, as they are at present.

These gentlemen, whom you suggest should be decorated by the Minister of Defence with an arm badge, would then have the right to wear a much more honourable badge, that of a military unit.

Yours, etc.,

CARL DYRING.

63 Collins Street, Melbourne,
February 5, 1918.

### THE METRIC SYSTEM.

Sir,—I would like to point out what seems to me to be an anomaly in the new system of prescribing by metric measure. I refer to the fact that we still retain the standard four ounces and eight ounces bottles, thereby increasing, to my mind, instead of lessening, the work of the pharmacist. If prescribers would use the five ounces and ten ounces bulk instead, matters would be greatly simplified. If five ounces were prescribed, the pharmacist, when calculating his bulk quantity of each drug, would simply require to shift his decimal point one number to the right, and with the ten ounces only double his dose for each drug and then shift his decimal point.

We already have the ten ounces bottle, and if it became a habit to prescribe five oounces instead of four or six, a five ounces bottle would soon be forthcoming to meet the demand.

Yours, etc.,

J. R. DAVIS.

"Cahore," Bay Street, Port Melbourne,
February 8, 1918.

## Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

Royal Alexandra Hospital for Children, Chief Resident Medical Officer.

Department of Public Health, Queensland, Health Officer.

## Medical Appointments.

### IMPORTANT NOTICE.

**Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.**

| Branch. | APPOINTMENTS. |
|---|---|
| VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.) | All Friendly Society Lodges, Institutes, Medical Dispensaries and other contract practice.<br>Australian Prudential Association Proprietary, Limited.<br>National Provident Association.<br>Life Insurance Company of Australia, Limited.<br>Mutual National Provident Club. |
| QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.) | Medical Officers to the Selwyn Hospital, North Queensland.<br>Brisbane United Friendly Society Institute. |
| SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.) | The F.S. Medical Assoc., Incorp., Adelaide.<br>Contract Practice, Appointments at Renmark. |
| WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.) | All Contract Practice Appointments in Western Australia. |
| NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.) | Australian Natives' Association.<br>Balmain United F.S. Dispensary.<br>Canterbury United F.S. Dispensary.<br>Leichhardt and Petersham Dispensary.<br>M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney.<br>Marrickville United F.S. Dispensary.<br>N.S.W. Ambulance and Transport Brigade.<br>North Sydney United F.S.<br>People's Prudential Benefit Society.<br>Phœnix Mutual Provident Society.<br>F.S. Lodges at Casino.<br>F.S. Lodges at Lithgow.<br>F.S. Lodges at Parramatta, Auburn and Lidcombe.<br>Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend. |
| TASMANIA. (Hon. Sec., Belerive, Tasmania.) | Medical Officers in all State-aided Hospitals in Tasmania. |
| NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.) | Friendly Society Lodges, Wellington, N.Z. |

## Diary for the Month.

Feb. 19.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Feb. 26.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Feb. 27.—Vic. Branch, B.MA., Council.
Mar. 1.—Q. Branch, B.M.A.
Mar. 5.—N.S.W. Branch, B.M.A., Ethics Committee.
Mar. 6.—Vic. Branch, B.M.A.
Mar. 7.—N.S.W. Branch, B.M.A., Last Day for Nomination of Candidates for Branch Council.
Mar. 12.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Mar. 12.—Tas. Branch, B.M.A., Council and Branch.
Mar. 14.—Vic. Branch, B.M.A., Council.

### EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.